

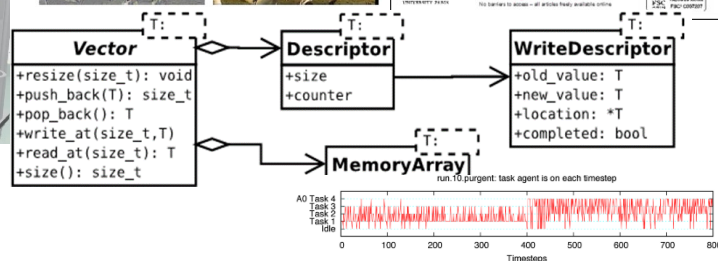
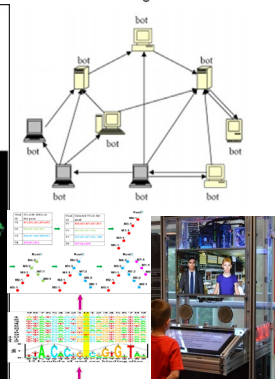
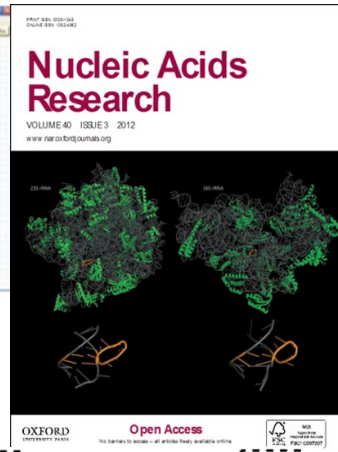
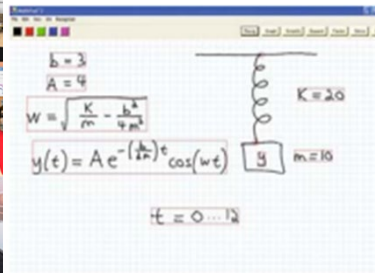
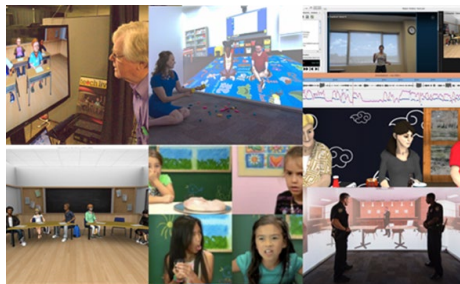
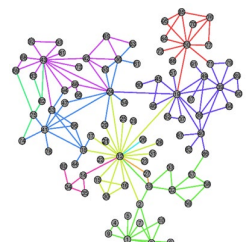
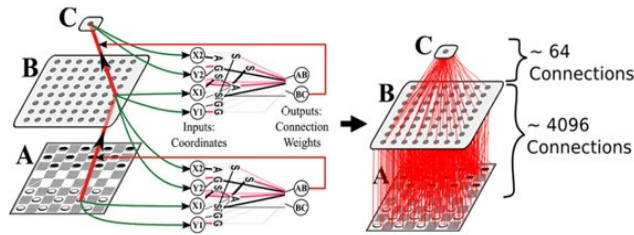
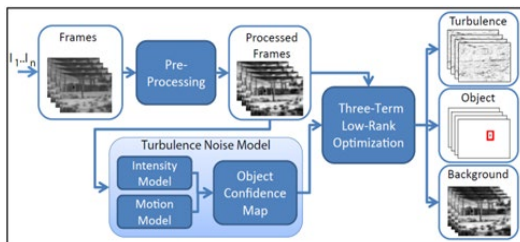


# Department of Computer Science

UNIVERSITY OF CENTRAL FLORIDA

## RESEARCH BOOKLET

2020-21



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# OVERVIEW OF RESEARCH IN COMPUTER SCIENCE AT UCF

Research in Computer Science spans a wide range of topics. At UCF research in Computer Science emphasizes:

- Innovative uses for computation (including new applications, algorithms, protocols, and tools),
- Studies of issues surrounding computation (including security, theory, human-computer interaction, and insights into the design, programming and verification of programs and systems), and
- Investigations into the nature of computation (including questions such as: what is intelligence?).

Typically, writing a computer program is not considered worthy of a research publication, unless the program is being used to demonstrate some new tool, programming technique, or has some other purpose driven by the kinds of Computer Science questions described above. Thus, while we are eager to partner with others in research, our potential research partners need to be aware that computer science research is not the same as programming.

Our faculty have won many awards (such as best paper awards at conferences) and have been recognized by various professional societies. We have on our faculty a member of the National Academy of Engineering, 5 Fellows of the IEEE, one ACM Fellow (and one retired), 1 IAPR Fellow, 1 SPIE Fellow, and 1 Fellow of the AAAS (and one retired). Our faculty also includes 8 NSF CAREER award winners, 3 AFOSR Young Investigator award winners, and 2 DARPA CS Study Group award winners. See <http://www.cs.ucf.edu/about/facawards.php> for more details and other faculty awards.

In what follows we give a brief overview of the main research areas in Computer Science at UCF.

**Computer Vision** addresses the problem of how to use computers to process visual information, including pictures and videos. Specific problems include detection and recognition of objects, features, or actions, segmentation of videos, and using image or video data in computational processes. Drs. Bagci, Foroosh, da Vitoria Lobo, Mahalanobis, Rawat, Shah, and Welch work in this area.

**Image and Video Processing** addresses the problems of acquisition, storage, retrieval, and processing of images, videos, and high dimensional signals for extraction and analysis of useful information for human users, robots, and autonomous systems. Specific problems include design and analysis of imaging sensors, high-dimensional signal representation and transformation, compression methods, image/video retrieval, 3D sensing and modeling, medical imaging, space imaging, and live video computing. Drs. Bagci, Foroosh, Gong, and Hua work in this area.

**Virtual Reality (VR)** is a multidisciplinary area of research aimed at interactive computer-mediated immersive simulations of environments or experiences typically involving sight, sound, and touch. Simulations involving a blending of real and virtual objects is often referred to as Augmented Reality (AR). Research in VR/AR encompasses a wide range of fundamental topics, including computer graphics, multi-modal systems (e.g., displays, tracking, haptics, robotics), 3D interaction, illusions of presence/tele-presence, and human factors. One of our current foci is on human-centered experiences involving avatars and virtual humans for training teachers, healthcare practitioners, and military personnel.

**Human Computer Interaction (HCI)** is the scientific study how humanity communicates with all aspects of computing technology. HCI is an interdisciplinary field that spans computer science, computer engineering, psychology, human factors, and cognitive science. In our department, we focus specifically on developing and evaluating interactive systems that help to improve people's lives when using computer-based environments. We focus on improving the user experience in application areas such as education, entertainment, medicine, robotics, and general work productivity. Drs. Cruz-Neira, Hughes, LaViola, McMahan, Mell, Welch, and Wisniewski work in these areas.

**Artificial Intelligence (AI)** seeks to understand the fundamental nature of intelligence and how to make computers exhibit intelligent behavior. **Machine Learning** addresses the problem of how to automatically learn concepts and behaviors from data. With seven faculty in AI and machine learning, UCF CS is highly active in these areas. Major research strengths include complex systems, data mining, diagnostics, evolutionary computation, intelligent simulation, knowledge representation, learning from observation of human performance, multi-agent systems, natural language processing, neural

networks, neuroevolution, robotics, and social informatics. Drs. Boloni, Fu, Gong, Gonzalez, Hu, Liu, Sukthakar, and Wu work in this area.

**Computer Graphics** addresses the problem of how to produce images of objects from their mathematical descriptions using computers. Examples of specific research foci include how to render realistic looking objects, how to animate such objects, and how to use rendering and animation for simulation and interactive training including Virtual Reality and Augmented Reality. Some of our work involves computer vision/image processing, for example interactive view synthesis and Spatial Augmented Reality. Drs. McMahan, Pattanaik, and Welch work in this area.

**Software Engineering** addresses the problem of how to produce quality software on time and within a specific budget. **Systems** work addresses the problem of how to build large computer systems that accomplish some specific purpose. Specific research problems in Software Engineering that we are investigating include: how best to describe what software systems are supposed to do (specification), how to ensure that computational systems behave correctly (verification), model checking of software and hardware systems with a particular emphasis on scalable formal verification of cyber-physical systems and quantitative computational models, how to parallelize systems for maximum efficiency, how to model, analyze, and optimize the performance of software, and how to build large, concurrent and distributed systems. Drs. Dechev, Gazzillo, Hua, Jha, Leavens, Marinescu, Turgut, and Wang work in these areas.

**Database** research addresses the problem of storage and retrieval of data. Information must be stored in a fashion that allows both efficient and convenient retrieval by people and applications. Specific problems addressed in research at UCF include techniques for parallel and distributed processing of very large data sets, database management as a service, moving object databases for mobile computing, querying multimedia databases that may include online cameras as a special class of storage devices, database management in the Internet of Things, and data privacy and security. Drs. Hua, Llewellyn, and Zou work in this area.

**Parallel Computation** deals with the theory and practice of organizing computations to run faster on machines with several processors. Different models of parallelism are studied along with parallelizability of various problems. Practical aspects involve designing parallel algorithms and data structures to solve compute-intensive problems on rapidly evolving platforms with massive parallelism, fast and efficiently. A key challenge for creating and adapting parallel software applications is the high architectural complexity of HPC systems in terms of their degree of concurrency and heterogeneity, sensitivity to communications and data movement, and requirements for locality. Enabling effective large-scale multiprocessor computing will have an impact that crosscuts multiple areas of science. There are still many barriers involved in building efficient HPC software applications and hardware platforms. Research at UCF aims to provide the fundamental tools and techniques for understanding how to design applications and algorithms for the rapidly evolving massively parallel chip architectures. Drs. Dechev, Heinrich, Hua, Jha, Marinescu, Solihan and Wang work in this area.

**Networking and Mobile Computing** is concerned with designing efficient communications protocols and architectures for exchanging data among computers and mobile devices. The scientific results of the field enable a wide range of networked applications and enhance the real-world experience of network and mobile users. Research areas investigated by our faculty include but are not limited to resource management techniques in ad hoc, cellular, and cognitive radio networks, challenging topics in sensor networks such as intruder tracking, underwater sensors and maximizing value of information, intelligent sharing of wired and wireless bandwidth, and real-time transmission of audio and video over wireless networks/Internet. Drs. Chatterjee, Hua, Mohaisen, and Turgut work in this area.

**Computer Security** is concerned with designing mechanisms for protecting computers and networks from attacks, keeping information confidential and safe from tampering, preventing unauthorized access to resources, and providing robust security to various applications including e-commerce transactions. Research areas investigated by our faculty include but are not limited to Intrusion Prevention and Detection, Malware Propagation Modeling and Analysis, Security of Wireless Networks, Sensor Networks and Vehicular Ad hoc Networks, Authentication Protocols, and Cloud Security. **Digital Forensics** addresses the problem of recovering evidence (e.g., to be used in court) from computers, mobile devices, or any

storage media that may hold data in binary form. Drs. Chen, Jha, Gazzillo, Leavens, Mohaisen, Solihin, Wocjan, and Zou work in these areas.

**Bioinformatics** is an interdisciplinary field to study various biological problems using advanced computational and statistical methods. With large-scale high-throughput biological data rapidly accumulated, this fast-growing field has become an indispensable part to biology research, also an important avenue for computer scientists to study biological problems. Bioinformatics research at UCF CS focuses on the following several areas: computational genomics, metagenomics, non-coding RNA and RNA genomics, systems biology to model gene protein interactions and gene regulation, and machine learning and data mining algorithms to integrate massive biological data and networks. Computational systems biology is the new and upcoming inter-disciplinary science that combines approaches from dynamical systems, control theory, formal methods, and process algebra to study the complex interactions within and among biological systems. Building on the existing success of bioinformatics and bio-imaging research, computational **systems biology** constructs mathematical and computational models so as to facilitate a holistic understanding of biological systems; hence, it differs fundamentally from the reductionist view of traditional studies in life sciences. Together with partners from medical schools and national laboratories, we are studying translational computational systems biology with applications in drug design, metabolic networks, clinical decision making, and the design of verified biomedical cyber-physical systems. Drs. Hu, Jha, Thankachan, Yooseph, Shaojie Zhang, and Wei Zhang work in these areas.

**Theory of Computing** addresses the problem of understanding the fundamental nature and limits of computation. Algorithms addresses the problem of how to best solve specific problems using minimal time and space resources. **Quantum Computing** addresses the problem of how to compute using quantum mechanical phenomenon, such as photons. Specific problems in the Theory of Computing include how to classify problems as to their degree of difficulty. Specific problems in Algorithms include finding (optimal) algorithms for computing problems and proving that a given problem requires a certain minimum amount of resources for its solution. Specific problems in Quantum Computing include finding algorithms for solving problems efficiently using quantum information. Drs. Deo, Hughes, Marinescu, Thankachan, Wocjan, Yooseph, and Shaojie Zhang work in these areas.

**Computer architecture** research focuses on designing computer systems optimized for high performance, energy efficiency, and scalability or some combination thereof. This research may focus on many aspects of computer systems including the design of processors, memory systems, GPUs, mobile and embedded devices, big data I/O systems, networks, and large-scale parallel machines. Specific problems include the hardware/software co-design of energy efficient architectures for heterogeneous multicore processors and understanding the interaction of file systems and parallel I/O systems in big data applications and its implications for modern file system design. Drs. Chen, Heinrich, and Solihin work in this area.





# Department of Computer Science

UNIVERSITY OF CENTRAL FLORIDA

## **FACULTY RESEARCH SUMMARIES**

[www.cs.ucf.edu/research/](http://www.cs.ucf.edu/research/)

## Ulas Bagci



### Assistant Professor

Ph.D., Computer Science: University of Nottingham, UK, 2010.  
Principal Investigator (NIH R01)

### Other Affiliations:

*Guest Investigator, Clinical Center, NIH, Bethesda, MD.*

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- Machine Learning / Deep Learning,
- Biomedical Imaging

### Other Experience

- Staff Scientist and Lab Manager, NIH.
- Visiting Fellow, University of Pennsylvania.
- Co-Founder, DGMed Inc.

### Professional Activities

- Member: MICCAI, IEEE (Senior), ACM, AAAS, ASA, Royal Statistical Society (RSS), RSNA (Associate), SNMMI
- Program Committee Member for many international conferences (MICCAI, SPIE, etc)
- Associate Editor: Medical Physics, Plos One, Medical Image Analysis, IEEE Transactions on Medical Imaging
- Grant Proposal Reviewer: NIH, NSF, Czech Science Foundation, Breast Cancer Now (UK), Fondation Recherche Medicale (FR), AAAS
- AAPM Summer School-Talk/Lectures on Deep Learning
- More than 40 international/national invited talks

### Honors & Awards

- 2019-Kikuchi Karlaftis Annual Best Paper Award
- 2019-Best Research Paper Award, Smart Conference.
- 2019-Pancreas Pre-Cancer Discovery (Mayo Discovery News)
- 2018-UCF's top 10 research findings in 2019 (lung cancer AI)
- 2018-FoxTv Highlights – Lung Cancer Diagnosis with AI
- 2017-RSNA Merit Award (Deep Learning in Radiology)
- 2016-Best Scientific Reviewer Award, MICCAI.
- 2016-Department of Health/FL rapid pilot Grant: Zika Imaging of fetuses for early detection
- 2016-Nvidia GPU grant
- 2014 & 2011-RSNA Certificate of Merit (3 times)
- 2014-IEEE TBME Highlights on the Cover-Novel PET Image Segmentation methodology
- 2013 & 2012-Winner of NIH FARE Award
- 2013-Highlighted in *AuntMinnie* and *MDLinx* due to Novel MRI/PET Image Analysis Software
- 2012-Best Poster Prize, Molecular Imaging of Infectious Disease

## Ladislau Bölöni



### Professor

Ph.D., Computer Science; Purdue University, 2000

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### Research

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- *Robotics and AI*
  - Deep learning from demonstration
  - Vision-based end-to-end learning
  - Human-robot teaming
  - Meta learning
- *Autonomous agents*
  - Modeling of human behavior in social and cultural environments
  - Mutable agents
- *Cognitive architectures*
  - Narrative reasoning
- *Distributed and grid computing*
  - Task scheduling and resource allocation
- *Wireless networking*
  - Sensor networks with mobile sinks and nodes
  - Value of information-based approaches

### Other Experience

- Visiting Researcher, Hungarian Academy of Science 1994-95
- Infrastructure Architect, CPlane Inc. 2000-2002
- Visiting Researcher, Imperial College, London, 2011
- Visiting Researcher, University of Rome La Sapienza, 2012
- Visiting Researcher, KTH Royal Institute of Technology, Stockholm 2018-2019.
- Member of Technical Advisory Board / Chief Architect, MosaixSoft Inc 2015-2017
- Co-Founder, Ximpatco Robotics

### Professional Activities

- Associate Editor, International Journal of Ad Hoc and Ubiquitous Computing
- Panel reviewer (NSF, NASA, NIH, NIST)
- Member IEEE (senior), ACM, AAAI

### Honors & Awards

- Kurzweil Best Artificial General Intelligence Idea Prize 2014
- Best Paper Award ICC 2013
- NASA Software Award 2005
- UCF Research Incentive Award (RIA) 2019

## Mainak Chatterjee



### Associate Professor

Ph.D., Computer Science & Engineering;  
University of Texas at Arlington, 2002  
Secondary Joint Appointment in Electrical & Computer Engineering

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- *Cybersecurity*
  - Blockchain and Cryptocurrencies
  - Trust models; Attack & defense strategies
  - Information fusion & consensus
- *Wireless Networks*
  - Software defined radio & Dynamic spectrum access
  - Internet of things; Ad hoc and sensor networks; 4G/5G
  - Testbed implementations
- *Network Economics*
  - Pricing issues in networks
  - Game and Auction theories
- *Online Social Networks*
  - Online recommender systems & rating predictions
  - Social network interactions
  - Information propagation
- *Video Delivery*
  - Video transport, Quality of Experience (QoE)
  - IPTV, VoD, Streaming media

### Other Experience

- Faculty Fellow, Air Force Research Lab
- Consultant, NEC, ITT, BAH, and AFRL
- Research Intern, Nokia Research, 2001

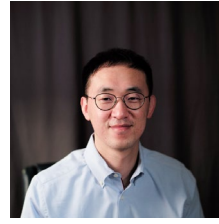
### Professional Activities

- Editor: Pervasive and Mobile Comp; Computer Comm.
- Founding Chair: ACM Workshop Mobile Video (MoVid)
- External PhD Examiner: Canada, Norway, India, Germany
- TPC Co-Chair: GlobeCom WoWMoM, ICCCN, ICDCN
- TPC member: INFOCOM, DySPAN, ICC, PerCom

### Honors & Awards

- UCF Teaching Incentive Program Award (TIP), 2010, 2016
- Best paper award, IEEE PIMRC 2011
- US National Research Council Fellowship Award 2011
- Best paper award, IEEE Globecom 2008
- Young Investigator Program (YIP) Award, AFOSR
- Best dissertation award, CSE, UTA, 2002
- Best Summer Intern, Nokia Research, Dallas, 2001

## Guoxing Chen



### Assistant Professor

Ph.D., Computer Science & Engineering;  
The Ohio State University, 2019

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- *System Security*
- *Side-Channel Security*
- *Trusted Execution Environment*
- *Differential Privacy*

### Other Experience

- Research Scientist, Facebook Inc., 2019-2020

### Professional Activities

- TPC member of IEEE CloudCom 2020
- Reviewers IEEE TDSC, IEEE TIFS, IEEE TPDS, ACM TOPS, ACM TOSN, IEEE TSC

### Honors and Awards

- Student Travel Grants: ACM CCS 2015, IEEE INFOCOM 2018
- O'Donnell Fellowship, OSU, 2013-2014

### Selected Publications

- G. Chen, Y. Zhang, T.H. Lai, "OPERA: Open Remote Attestation for Intel's Secure Enclaves", ACM CCS 2019.
- G. Chen, S. Chen, Y. Xiao, Y. Zhang, Z.Lin and T.H. Lai, "SgxPectre: Stealing Intel Secrets from SGX Enclaves Via Speculative Execution," IEEE EuroS&P 2019.
- G. Chen, W. Wang, T. Chen, S. Chen, Y. Zhang, X. Wang, T.H. Lai, D. Lin, "Racing in Hyperspace: Closing Hyper-Threading Side Channels on SGX with Contrived Data Races, " IEEE S&P 2018.
- G. Chen, T.H. Lai, M. Reiter, Y. Zhang, "Differentially Private Access

## Carolina Cruz-Neira



### Agere Chair Professor

Ph.D., Electrical Engineering and Computer Science; University of Illinois at Chicago, 1995.

### Contact

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407 - 823-1394

### Research

- *Virtual Reality Systems*
  - Design of software frameworks for hardware-agnostic applications
  - Design of new VR platforms beyond headsets
- *Simulation and Training*
  - Context-sensitive collaborative environments
  - Multi-platform environments
- *Applications for Virtual and Augmented Reality*
  - Practical applications for the use of virtual and augmented reality in a wide range of disciplines and domains
- *Emerging Visual Data Analytics*

### Other Experience

- 01/18 – present CEO, CG Heroes, LLC
- 02/18 – present Co-Founder and Steering committee member, Americal CyberAlliance
- 05/16 – present Steering Committee member, NSF Big Data South Hub
- 07/14 – present Senior Advisor, Natural Sciences and Engineering Research Council of Canada (NSERC)
- 03/2006-12/2008 CEO Louisiana Immersive Technologies Enterprise

### Professional Activities

- Chief Editor, VR and Industry, *Frontiers in Virtual Reality Journal*
- Editorial Board, *Computers and Graphics Journal*
- Editorial Board, *Multimodal Technologies and Interaction Journal*
- Panel reviewer (NSF, NASA, NIH, NIST)
- IEEE Conference on Virtual Reality and 3D User Interfaces, Co-founder, and several roles (General conference Chair, Program Chair, Research Exhibits Chair, Publicity Chair, technical program reviewer)

### Honors & Awards

- IEEE Fellow, 2020
- National Academy of Engineering member, 2018
- Spark Star, Museum of Discovery, Little Rock, AR, 2016
- Named among “the top 25 innovators in virtual reality,” Polygon Media, 2016
- Named one of the three “*Virtual Reality Greatest Female Innovators*,” University Herald, 2016.
- Winner, Sikorsky Entrepreneurial Challenge 2014 (with Dirk Reiners and Don Pierce)
- Member, National Research Council Panel on Human Factors Science for the Army Research Laboratory 2013-2015.
- 2009 Distinguished Career Award, International Digital Media & Arts Society
- IEEE VGTC Virtual Reality Technical Achievement Award 2007
- Inducted by the ACM as a “*Computer Graphics Pioneer*,” Jan 2003
- Eminent Engineer, Tau Beta Pi, April 2002
- Boeing Welliver Faculty Fellowship, Summer 2001

## Niels da Vitoria Lobo



### Associate Professor

Ph.D., Computer Science; University of Toronto, 1993

### Contact

[niels@cs.ucf.edu](mailto:niels@cs.ucf.edu)

407-823-2873

### Research

<http://server.cs.ucf.edu/~vision/faculty/nielslobo.html>

- *Machine Learning for Vision*
  - Learning representation for visual reasoning
  - Unsupervised discovery of new object classes
  - Visual Captioning and Question Answering
- *Computer Science Education*
  - Early teenage programming pedagogy
  - Broadening Participation

### Professional Activities

- National Science Foundation panelist, Fall 2019

### Active Funding

- NSF REU Site co-P.I. (2018-2021)
- NSF Research Experience for Teachers Site co-P.I. (2015-2019)
- NSF S-STEM Senior Personnel (2018-2023)

### Recent Publications

- Da Vitoria Lobo N., and Shah M., “UCF’s 30-Year REU Site in Computer Vision”, *Communications of the ACM*, January 2019, Vol. 62 No. 1, pages 31-34, 2019. 10.1145/3201403.
- Vaca-Castano G., Da Vitoria Lobo N., Shah M., “Holistic Object Detection and Image Understanding”, *Computer Vision and Image Understanding*, April 2019, Vol. 181, pages 1-13, 2019. 10.1016/j.cviu.2019.02.006

## Damian Dechev



### Associate Professor

Ph.D., Computer Science and Engineering; Texas A&M University, 2009

### Contact

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407-823-2549

### Research

<http://cse.cs.ucf.edu>

- *Programming Techniques and Tools*
- *Multiprocessor Programming*
- *Concurrent Data Structures*
- *Verification of Concurrent Algorithms*
- *Large-scale Performance Analysis*

### Other Experience

- Senior Member of Technical Staff, Sandia National Laboratories, Livermore, CA 2009-2010;
- Research Staff Intern, NASA/Caltech Jet Propulsion Laboratories, Pasadena, CA 2005-2007;
- Research Assistant, Texas A&M University, College Station, TX 2003-2009;
- Adjunct Faculty, University of Delaware, Newark, DE, 2001-2003;

### Professional Activities

- Referee for NSF and DOE ASCR Reviews Panels.
- PC Member for ACM/IEEE CCGrid 2015, 2016, 2017.
- UCF CS Department Graduate Committee Member.

### Honors and Awards

- Best Paper Award Finalist, 28th ACM Symposium on Parallelism in Algorithms and Architectures (SPAA 2016), July, 2016.
- Best Paper Award, 13th IEEE International Conference on Embedded Computer Systems: Architectures, Modeling, and Simulation (SAMOS XIII), July, 2013.

## Hassan Foroosh



### CAE Link Professor of Computer Science

Ph.D., Computer Science; INRIA-University of Nice, France, 1996

### Contact

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407-823-5299

### Research

Director, Computational Imaging Lab.: <http://cil.cs.ucf.edu>

- *Image/Video Understanding*
  - Deep Learning: Sparse Architectures, “Big Data” Analytics
  - Confluence of vision and natural language processing
  - Transfer learning, Deep Adversarial methods
  - Facial features/expression, Gesture Recognition
  - Emotion/Sentiment analysis in images
- *Video Surveillance and Camera Networks*
  - Video Activity Recognition and Monitoring
  - Video Context Analysis and Retrieval
  - Multi-Target Tracking on Moving Platforms
  - Video Camera Networks: Self-Calibration and Self-Configuration, Multi-target tracking and Reidentification
- *Image/Video Processing*
  - Super-resolution (Video, SAR, EO, IR, Hyper-spectral)
  - Compressed Sensing, Cooperative Sensing, Compressed Domain Target Localization, Recognition, and Coding
  - Bio-Medical Image Analysis and Processing
- *Image-Based Modeling*
  - 3D Modeling from Video/Image Data

### Other Experience

- Senior Research Scientist, UC Berkeley, 2000-2002
- Research Scientist, University of Maryland, 1997-2000

### Professional Activities

- Voting Member of the IEEE Multimedia Communications Technical Committee (MMTC)
- Associate Member of IEEE Image, Video, and Multi-dimensional Signal Processing Technical Committee, 2010
- Associate Editor, IEEE Transactions on Image Processing, 2011-2015, 2002-2008
- Area chair, Organizer, TPC member, IEEE ICIP, since 2002
- TPC member and Session Chair: CVPR, ICCV, since 2002

### Honors & Awards

- IEEE ICIP Best Paper Award, 2018
- CECS Advisory Board Award for Faculty Excellence, 2017
- CECS Excellence in Research Award 2016, 2014, 2006
- UCF Millionaires' Club Award, 2015, 2014, 2013
- UCF Research Initiative Award (RIA), 2019, 2014, 2009
- UCF Teaching Incentive Program (TIP) Award, 2013, 2008
- IAPR Piero Zamperoni Award, 2004
- IAPR Best Scientific Paper Award
- Senior Member, IEEE

## Yanjie Fu



### Assistant Professor

Ph.D., Rutgers University, 2016

### Contact

[Yanjie.Fu@ucf.edu](mailto:Yanjie.Fu@ucf.edu)

### Research

<http://www.yanjiefu.com>

Integrated human and machine learning with spatial, temporal, and networked behaviors for big data applications.

- Deep representation spatial temporal and networked data
- Reinforcement learning and automated data science
- Spatial temporal knowledge graphs
- Prescriptive and real-time outlier detection
- Applications: power grids, transportations, recommender systems, urban computing, IoT analysis, intelligent education

### Other Experiences

- Assistant Professor of Missouri S&T, 2016-2019
- Summer Intern, IBM TJ Watson Research, 2015
- Summer Intern, Huawei Research, 2013-2014
- Summer Intern, Microsoft Research Asia, 2012

### Professional Activities

- Member of ACM, IEEE, SIAM
- TPC members of ACM SIGKDD, IEEE ICDM, ACM SIGSpatial, AAAI, IJCAI, IEEE BigData, ACM CIKM, SIAM SDM, PAKDD, DASFAA
- Reviewers of IEEE TKDE, ACM TKDD, ACM TOIS, INFORMS JOC, IEEE TBD, ACM TIST, IEEE TMC, KAIS, Neurocomputing

### Honors & Awards

- 2018 ACM SIGKDD Best Student Paper, Runner-Up
- 2018 NSF CRII (mini-CAREER) Award
- 2017 University of Missouri Research Board Award
- 2016 Microsoft Research Azure Research Award
- 2014 IEEE ICDM Best Paper, Runner-up
- 2010 IEEE WCCI Active Learning Challenge Championship (First Place)

## Paul Gazzillo



### Assistant Professor

Ph.D., Computer Science; New York University, 2016

### Contact

[Paul.Gazzillo@ucf.edu](mailto:Paul.Gazzillo@ucf.edu)

### Research

<https://paulgazzillo.com/>

- *Programming languages and compilers*
  - Program analysis
  - Language design
- *Software engineering*
  - Analysis of highly-configurable software
  - Build and configuration systems
- *Software security*
  - Side-channel attack detection and mitigation
  - Blockchain smart contracts

### Professional Activities

- Program committee (MODEVAR 2019, SPLC Challenge 2018)
- NSF Panelist (2020, 2019)
- Artifact Evaluation Committee (OOPSLA 2018, POPL 2018)

### Honors & Awards

- NSF CAREER award (2020)
- NYU MacCracken Fellowship (2014-2015)
- NYU Matthew Smosna Prize (2012)
- ACM SIGPLAN Research Highlight (2012)

### Funding

- PI, NSF grant “CAREER: Inferring and Securing Software Configurations through Automated Reasoning”, 2020–2025.
- PI, NSF grant “SHF: Small: Collaborative Research: Static Analysis Infrastructure for Variability-Aware Bug Detection and Translation of Highly-Configurable Software Systems”, 2018-2021.



## Mark Heinrich



### Associate Professor

Ph.D., Electrical Engineering; Stanford University, 1999

### Contact

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407-882-0138

### Research

<http://www.cs.ucf.edu/~heinrich>

- *Parallel Computer Architecture*
- *Heterogeneous/GPGPU Architectures*
- *Energy-efficient architectures*
- *Cloud-based Mobile and Web Services*
- *Scalable Cache Coherence Protocols*

### Other Experience

- CS Senior Design Coordinator, 2013-present
- Director, School of Computer Science, UCF, 2005
- Associate Director, School of EECS, UCF, 2005-07
- Founder, CTO, Phanfare Inc., 2004-2011, Acquired by Carbonite, August 2011
- Assistant Professor, ECE, Cornell University, 1998-2002
- Founder, CTO, Flashbase, Inc., 1998-2000, Acquired by DoubleClick, Inc., May 2000

### Professional Activities

- Senior Member, IEEE, Member ACM
- Reviewer NSF, various IEEE and ACM Conferences (ISCA, ASPLOS, HPCA, MICRO, PACT)
- Program Committee and Workshop Chair, HPCA

### Honors & Awards

- Over 2,000 citations on Google Scholar
- IBM Faculty Award, 2004
- NSF CAREER Award, 2000-2004
- “The Stanford FLASH Multiprocessor” selected as one of best papers in 25 years of ISCA (836 citations)
- Cornell University College of Engineering’s Michael Tien ’72 Excellence in Teaching Award, 2001
- Cornell University IEEE Teacher of the Year, 1999-2000
- NSF Graduate Fellow, 1991-94
- Graduated 1<sup>st</sup> in class, Duke University, EE/CS, 1991

## Haiyan (Nancy) Hu



### Associate Professor

Ph.D., Computer Science; University of Southern California, 2006

### Contact

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407-882-0134

### Research

<http://www.cs.ucf.edu/~haihu>

- *Computational study of microRNA and long non-coding RNAs*
- *Computational methods to study epigenetic and genetic Regulation*
- *Genomics and Cancer, Alzheimer’s, Parkinson diseases*
- *Big and Small Data mining, Machine Learning and Statistical Pattern Recognition*

### Other Experience

- Research Assistant Professor, Indiana University 2006-2008

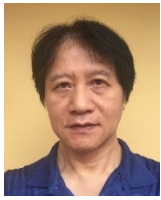
### Professional Activities

- Panelist for National Institutes of Health (NIH) (2016)
- Panelist for National Science Foundation (NSF) (2009, 2012, 2013, 2015, 2019)
- Panelist for The American Association for the Advancement of Science (2012)
- Reviewer for Pattern Recognition, Neural Networks, Genomics, Bioinformatics, Nature Scientific Report, IEEE/ACM Transactions on Computational Biology and Bioinformatics, PLOS ONE, and others
- Program Committee Software Engineering Research, Management and Applications (2009, 2010), Biomedical Informatics and Computational Biology (2011, 2012), ASE/IEEE International Conference on BioMedical Computing (2012), 2nd International Conference on Data Science and Information Technology (2019), 2nd International Conference on Algorithms, Computing and Artificial Intelligence (2019)
- Local Arrangement chair of ACM BCB conference (2012)

### Honors & Awards

- NSF CAREER Award, 2012-2019
- Research Incentive Award, UCF 2014
- Reach for the Stars Award, UCF 2015
- Research Incentive Award, UCF 2019

## Kien A. Hua



### Pegasus Professor

Ph.D., Electrical Engineering; University of Illinois at Urbana Champaign, 1987

### Contact

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407-823-5342

### Research

Co-Director, Data Systems Lab: <http://dsg.cs.ucf.edu/>

- *Data Management*
  - Image and Video Retrieval
  - Realtime Multimedia Computing and Internet of Things
  - Mobile Computing
- *Data Analysis*
  - Multidimensional Data Analytics
  - Neural Networks for Music Generation
  - Social Media Analytics
  - Medical Imaging Diagnosis
  - Intelligent Transportation Systems
- *Data Communications*
  - Video Communications
  - Wireless Communications

### Other Experience

- Advisory Engineer and Lead Architect of a Parallel Computer Project, IBM Mid-Hudson Laboratories
- NASA domain expert in space port technology

### Professional Activities

- Associate Editor, ACM Transactions on Multimedia Computing, Communications and Applications, Journal of Multimedia Tools and Applications, and International Journal of Advanced Information Technologies.
- Conference Chair, Track Chair, Program Vice Chair, Technical Program Committee Member of numerous IEEE and ACM Conferences
- Over 300 refereed publications

### Honors & Awards

- IEEE Fellow
- 15 Top/Best Paper Recognitions at international conferences and one paper of the year at a journal
- Best Presenter Awards at an IEEE conference
- UCF College of Engineering & Computer Science Distinguished Lecturer
- UCF Teaching Incentive Awards (three times)
- UCF Research Incentive Award

## Charles E. Hughes



### Professor

Ph.D., Computer Science; Penn State University, 1970

Secondary Appointments: Games and Interactive Media; Modeling, Simulation & Training; College of Community Innovation & Education

### Contact

[ceh@cs.ucf.edu](mailto:ceh@cs.ucf.edu)

407-823-2762

### Research

Co-Director, Synthetic Reality Lab: <http://sreal.ucf.edu>

Affiliate, Computational Imaging Lab: <http://cil.cs.ucf.edu>

Co-PI, TeachLivE Lab: <http://www.ucf.edu/teachlive>

Cluster Lead: Learning Sciences

- *Virtual Environments*
  - Affective and Human-Centered Computing
  - Virtual, Augmented and Mixed Reality
  - Virtual Learning Environments

### Other Experience

- Professor, Computer Science, Univ. of Tenn., 1974-80
- Assistant Professor, Comp. Sci., Penn State, 1972-74
- NRC Postdoctoral Research Associate, 1971-72

### Professional Activities

- Entertainment Computing, Associate Editor, 2011-
- Journal of Cybertherapy and Rehab Scientific Board, 2009-
- IEEE VR Best Paper & Demo Selection Comm. Member, 2016
- IEEE VR Program Committee, 2012-15, 2017-
- IEEE VR, co-chair, Research Demos, 2013
- HCII Program Committee, 2008-15
- ISMAR 2009 Tutorial Chair; Program Committee, 2009-13.
- Reviewer for NSF, and various journals and conferences

### Honors & Awards

- National Center for Simulation Hall of Fame, Inducted in 2020
- Pegasus Professor, UCF 2007
- US Patent No. 9,690,784 B1. Awarded June 27, 2017.
- US Patent No. 9,381,426 B1. Awarded July 5, 2016
- US Patent No. 8,477,149 B1. Awarded July 2, 2013
- ACM SIGGRAPH Pioneer
- ACM SUI Best Paper Award, 2018
- IEEE SeGAH Best Paper Award, 2016
- ICMI Grand Challenge People's Choice Award, 2015
- Best Publication Award from the Teacher Education Division of the Council for Exceptional Children, 2015
- Dean's Research Professorship Award, 2013
- Excellence in Research, CECS 2014
- UCF Research Incentive Award, 2013, 2007, 1995
- Undergraduate Teacher of the Year, UCF 2001
- Excellence in Undergraduate Teaching, UCF 2001, 1992
- Teaching Incentive Award, UCF 2015, 2009, 2002, 1995
- Senior Life Member, IEEE, & Senior Life Member, ACM



## Sumit Kumar Jha



### Associate Professor

United States Citizen

Ph.D., Computer Science; Carnegie Mellon University, 2010

B.Tech. (Honors), Computer Science and Engineering, IIT Kharagpur, 2004

Certificate in Quantitative Finance (CQF), 2012

### Contact

[jha@eeecs.ucf.edu](mailto:jha@eeecs.ucf.edu)

407-882-2215

### Research

<http://www.cs.ucf.edu/~jha>

- *Artificial Intelligence*
- *Emerging Architectures*
- *Quantum Computing*
- *Computational Finance*

### Other Experience

- Air Force Young Investigator Program 2016-2019
- AFRL Informational Directorate Visiting Faculty, Rome, 2018
- Air Force Summer Faculty Fellow, AFRL, Rome, 2014
- AFRL Informational Directorate Visiting Faculty, Rome, 2013
- General Motors R&D, Detroit, 2005

### Professional Activities

- Invited Speaker at the International Conference on Computational Advances in Bio and Medical Sciences, 2017
- Invited Panelist at the SRC SemiSynBio EDA/DBA (electronic/biological design automation) meeting, Edinburgh, UK, 2016
- Invited Speaker at the Numerical Software Verification (NSV) meeting, Vienna, 2014
- Member, *Alpha Quant Club*, 2010-2011
- Invited Speaker, BioPathways Workshop, *International Conference on Systems and Molecular Biology*, 2010

### Research Grants

- Over \$2 million in research funding over the last 5 years from NSF, Air Force, Royal Bank of Canada and Oak Ridge National Laboratory and other sponsors that do not want to be named.
- Export-controlled and ITAR projects.

### Honors and Awards

- Best Paper Award, Foundations in Security and Privacy (FPS), 2017
- US Patent US9558300 Awarded January 31, 2017
- Air Force Young Investigator Award April 19, 2016
- US Patent 9319047 Awarded 2016.
- IEEE ICCABS Best Paper Award 2014
- IEEE ICCABS Best Paper Award, 2010
- Carnegie Mellon Graduate Research Fellowship, 2004-2010

## Joseph J. LaViola Jr.



### Charles N. Millican Professor of Computer Science

Ph.D., Computer Science; Brown University, 2005

S.M., Applied Mathematics; Brown University, 2001

### Contact

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407-882-2285

### Research

Director, Interactive Computing Experiences Research Cluster:

<http://www.eecs.ucf.edu/isuelab/>

- *Virtual and Augmented Reality*
- *Pen and touch-based user interfaces*
- *3D user interfaces*
- *Usability analysis*

### Other Experience

- Director of the Modeling & Simulation Graduate Program at UCF, 2016 - 2018
- Adjunct Associate Professor of Research, Brown University, 2006-Present
- Founder, Fluidity Software, Inc., Somerville, MA, 2006-Present
- Founder, JLL Interface Consultants, Inc., Oviedo, FL, 2000-Present

### Professional Activities

- Senior Member, ACM, IEEE Computer Society
- Associate Editor, ACM Transactions on Interactive Intelligent Systems

### Honors & Awards

- UCF Scholarship of Teaching and Learning Award, 2017
- UCF Research Incentive Award, 2017
- UCF Reach for the Stars Award, 2014
- NSF CAREER Award, 2009

### Research Grants

- “NRI: Collaborative Research: Sketching Geometry and Physics Informed Inference for Mobile Robot Manipulation in Cluttered Scenes”, NSF Award IIS-1638060, \$286,434, Sole PI (100% credit), Sept. 2016 – August 2020.

### Selected Publications

- LaViola, J., Kruijff, E., McMahan, R., Bowman, D., and Poupyrev, I. *3D User Interfaces: Theory and Practice*, Second Edition, Addison Wesley, ISBN 0134034325, April 2017.
- Kulshreshtha, A. and LaViola, J. “Dynamic Stereoscopic 3D Parameter Adjustment for Enhanced Depth Discrimination”. *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems (CHI '16)*, 177-187, May 2016

## Gary T. Leavens



### Professor and Chair of the Dept. of Computer Science

PhD, Electrical Engineering & Computer Science;  
Massachusetts Institute of Technology, 1989

#### Contact

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407-823-4758

#### Research

<http://www.cs.ucf.edu/~leavens>

- *Formal Methods in Software Engineering*
  - Specification of OO software components
  - Design of JML (see [www.jmlspecs.org](http://www.jmlspecs.org)).
  - Theory of behavioral subtyping and specification inheritance.
- *Programming Languages*
  - Design and semantics of aspect-oriented programming languages.
  - Theory and design of multiple dispatch languages, including MultiJava (see <http://multijava.sourceforge.net/>).
- *Computer Security*
  - Design of information flow security policy languages

#### Other Experience

- Professor, Iowa State University 1989-2007
- Member of Technical Staff, Bell Labs, 1977-84

#### Professional Activities

- Member of IFIP Working Group 1.9/2.15 (Verified Software) and IFIP WG 2.3 (Programming Methodology)
- General Chair, *Foundations of Software Engineering* 2018
- General Chair, *SPLASH* 2012 conference
- Program Co-chair, *VSTTE* 2010 conference
- Research Program Chair, *OOPSLA* 2009 Conference
- Co-editor-in-chief: *Transactions on Aspect-Oriented Software Development* (Springer), 2011-2013, now on editorial board
- Associate Editor: *Journal of Object Technology*
- Assistant Editor, *Software and Systems Modeling*
- Co-organizer of two international workshop series

#### Honors & Awards

- Upsilon Pi Epsilon honor society, 2011
- “Memorable Teacher”, College of LAS, Iowa State Univ., 2007
- Senior Member of the ACM, 2007
- Senior Member of the IEEE Computer Society, 2000
- IEEE Distinguished Visitor Program Speaker 2003-2005

#### Selected Publications

- Leavens, Gary T. and Naumann, David A., “Behavioral Subtyping, Specification Inheritance, and Modular Reasoning.” *ACM Trans. On Programming Languages and Systems* Vol. 37, Issue 4, August 2015. <https://doi.org/10.1145/2766446>
- For other papers see <https://www.cs.ucf.edu/~leavens/main.html>

## Fei Liu



### Assistant Professor

Ph.D., Computer Science;  
University of Texas at Dallas, 2007

#### Contact

[feiliu@cs.ucf.edu](mailto:feiliu@cs.ucf.edu)  
407-823-3183

#### Research

<http://www.cs.ucf.edu/~feiliu/>

- *Natural language processing*
  - Summarization
  - Social media analysis
  - Language generation
  - Information extraction and retrieval
  - Spoken language understanding
- Machine learning
- Data mining
- Data analytics and visualization

#### Other Experience

- Postdoctoral Fellow, Carnegie Mellon University, Pittsburgh, Pennsylvania, 2013 – 2015
- Senior Research Scientist, Bosch Research, Palo Alto, California, 2011 – 2013

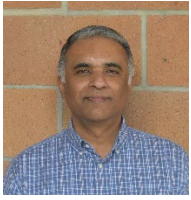
#### Professional Activities

- Area Chair, North American Chapter of the Association for Computational Linguistics (NAACL)
- Program Committee Member for: ACL 2012, 2013, 2014, 2015, KDD 2012, 2013, 2014, 2015, ICML 2015, EMNLP 2013, 2015, AAAI 2013, IJCAI 2013, ICASSP 2012, 2013, and others.

#### Honors & Awards

- Best Paper Finalist at the 25th International World Wide Web Conference (WWW), 2016
- Invited to participate in MIT Rising Stars in EECS (An Academic Career Workshop for nearly 60 top EECS women scholars in academia), 2015
- Special Performance Recognition Award, Bosch Research, 2012
- Eric Jonsson Distinguished Research Fellowship, 2007-11
- Academic Excellence Award, 2011
- The Aage and Margareta Moller Endowed Scholarship, 2010

## Abhijit Mahalanobis



### Assistant Professor

Ph.D., Computer Science; Carnegie Mellon University, 1987

### Contact

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Phone: 407 823 4999

**Research** <https://www.crcv.ucf.edu/person/abhijit-mahalanobis/>

- Pattern Recognition and Machine Learning
- Automatic Target Detection and Recognition
- Computer Vision Systems and Applications
- Integrated Sensing and Information Exploitation

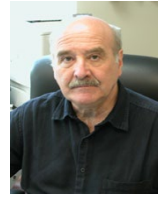
### Other Experience

- Senior Fellow, Lockheed Martin Corporation (2012-2018)
- Lead, Center of Excellence (COE) for advanced ATR and Video Analytics, Lockheed Martin Missiles and Fire Control, Orlando, FL (2000-2012)
- Raytheon Honors Program, Raytheon Missile Systems Company, Tucson, AZ (1993-2000)
- Martin Marietta, Orlando, FL (1991-1993)
- Assistant Professor (Dept of ECE, Univ. of MD, Univ. of Az) 1987-1991
- Associate Editor for Applied Optics
- Division Chair, OSA Board of Meetings (3 year term)
- Conference Chair, SPIE Conference on ATR

### Honors & Awards

- Recipient of DARPA Young Faculty Award (2019)
- Fellow of IEEE,
- Fellow of OSA
- Fellow of SPIE
- Recipient of Minority Scientist of the Year Award (2006)
- Lockheed Martin NOVA award (2006)

## Dan C. Marinescu



### Professor

Ph.D., Electrical Engineering and Computer Science; Polytechnic Institute, Bucharest, 1975

### Contact

[dcm@cs.ucf.edu](mailto:dcm@cs.ucf.edu)

407-823-4860

**Research** <http://www.cs.ucf.edu/~dcm/>

- Scheduling
- Workflow Management and Grid Computing
- Parallel Algorithms and Performance Evaluation of Parallel and Distributed Systems
- Quantum Computing and Quantum Information Theory
- Cloud Computing

### Other Experience

- Professor of Computer Science at Purdue University from 1984-2001
- Associate Professor of EECS, Polytechnic Institute
- Senior Researcher, Institute for Atomic Physics of the Romanian Academy of Science.
- Visiting Professor, INRIA Paris, 1998, 2000, 2005, 2006
- Adjunct Professor, Tsinghua University, Beijing
- Visiting Faculty at several institutions and universities.
- Journal/Book Publications:
  - D. C. Marinescu, A. Paya and J. P. Morrison. "A Cloud Reservation Systems for Big Data Application," IEEE Transactions on Parallel and Distributed Systems, 20(1):606-618, 2017.
  - A. Paya and D. C. Marinescu. "Energy-aware Load Balancing and Application Scaling for the Cloud Ecosystem," IEEE Transactions on Cloud Computing, 5(1):15-27, 2017.
  - D. C. Marinescu, A. Paya, J. P. Morrison, and S. Olariu. "An Approach for Scaling Cloud Resource Management," Cluster Computing, Springer Verlag, 20(1):909-924, 2017.
  - Complex Systems and Clouds: A Self-Organization and Self-Management Perspective (Computer Science Reviews and Trends) 1st Edition, Morgan Kaufmann, 2016.
  - Cloud Computing: Theory and Practice, Second Editions, Morgan Kaufmann, 2017.

### Honors & Awards

- Author of "Approaching Quantum Computing" which was co-authored with Gabriela M. Marinescu and was awarded the prize of the Romanian Academy of Science for Informatics in 2004.
- Ernest T.S. Walton Award, Science Foundation of Ireland, 2007
- Fulbright Expert

## Ryan McMahan



### Associate Professor

Ph.D., Computer Science; Virginia Tech, 2011

### Contact

[rpm@ucf.edu](mailto:rpm@ucf.edu)

### Research

eXtended Reality & Training (XRT) Lab: coming soon

- eXtended and Virtual Reality (XR & VR)
- Training and Cyberlearning
- Human Computer Interaction (HCI)
- Computer Graphics

### Other Experience

- Associate Professor, University of Texas at Dallas, 2018-2019
- Assistant Professor, University of Texas at Dallas, 2012-2018

### Professional Activities

- Associate Editor, *IEEE Transactions on Visualization and Computer Graphics (TVCG)*
- Associate Editor, *International Journal of Human-Computer Studies (IJHCS)*
- Organizing Committees: VR 2007-08, 14-16, 18; 3DUI 2016-17; SUI 2017
- Program Committees: ISMAR 2019; SUI 2015-19; VR 2014-16, 18-19; AIVR 2018; 3DUI 2014-17; MVAR 2016; VRST 2015-16; HAVE 2014-15
- Advisory Board: MyndVR, LLC; SURVIVR PBC

### Honors & Awards

- Faculty Early Career Development (CAREER) Award, National Science Foundation, 2016 – 2021
- Provost's Award for Faculty Excellence in Undergraduate Research Mentoring, University of Texas at Dallas, May 2016
- Outstanding Faculty Teaching Award, Erik Jonsson School of Engineering and Computer Science, University of Texas at Dallas, May 2016
- Internet of Things (IoT) Technology Research Award, Google, April 2016

## Johnathan Mell



### Assistant Professor

PhD. , Computer Science, University of Southern California ,2020

### Contact

[Johnathan.Mell@ucf.edu](mailto:Johnathan.Mell@ucf.edu)

### Research

- Human-Computer Interaction
- Negotiation
- Socially-Aware Agents
- Computation in Games
- Computational Emotion

### Other Experience

- Visiting Researcher, USC Institute for Creative Technologies, 2020
- VP, Software Engineering Data Analytics, Custom Technologies LLC, 2016-2020
- Technical Sales Engineer, Q-Net Security, 2020
- Professional Intern, The Walt Disney Company, 2015

### Professional Activities

- Demonstrations, Chair, Automated Negotiating Agents Competition, 2018-2019
- Organizing Committee Member, Automated Negotiating Agents Competition, 2016- present
- Member, AAAC AAAI, IEEE, IGDA, ACM

### Honors and Awards

- Best Demonstration Finalist, AAMAS 2016
- Best Paper Finalist, Socially Interactive Agents AAMAS 2018

## David Mohaisen



### Associate Professor

Ph.D., Computer Science; University of Minnesota, 2012

### Contact

[mohaisen@ucf.edu](mailto:mohaisen@ucf.edu)

### Research

Homepage: <http://cs.ucf.edu/~mohaisen/>

- Systems security and online privacy
  - Internet of thing security and privacy
  - Scalable measurements and monitoring systems
- Blockchain systems security and applications
- VR/AR security and privacy
- Distributed denial of service attacks and defenses
- Malware analysis and detection
- Adversarial and applied machine learning

### Other Experience

- Visiting Research Faculty, AFRL, Summer 2017
- Visiting Researcher, Georgia Institute of Technology, 2017
- Faculty Fellow, AFRL, Summer 2016
- Assistant Professor, SUNY Buffalo, 2015 – 2017
- Senior Research Scientist, Verisign Labs, 2012 – 2015
- Researcher, ETRI, 2007 – 2009

### Professional Activities

- **Organizer:** ACM/IEEE SEC 2020 (tutorials chair), ACM CoNEXT 2019 (general chair), EAI SecureComm 2019 (PC co-chair), IEEE ICC 2019 (CISS'19 co-chair), IEEE SEC'19 (workshops chair), ACM WiSec'19 (posters co-chair), ACM MobiSys 2017 (treasurer).
- **Panelist:** IEEE ICDCS 2019, EAI SecureComm 2018, ACM DLoT 2018, IEEE CNS 2014.
- **Technical program committee membership:** PETS 2020, IEEE INFOCOM 2020, IEEE ICDCS 2020, NDSS 2018, ICWSM 2017
- **Editorship:** Editor-in-Chief of EAI Endorsed Transactions on Security and Safety (2019-), Associate Editor of Elsevier Computer Networks, Associate Editor of IEEE Transactions on Mobile Computing (2018-2021), Area Editor of Wiley ETRI Journal (2018-).

### Honors & Awards

- Best Paper Award, IEEE Systems Journal 2020,
- Best Paper Award, IEEE DSC (runner-up),
- Best Paper Award, ACM DLoT 2018,
- Senior ACM Member (2018) and Senior IEEE Member (2015)
- Best Student Paper Award, IEEE ICDCS 2017
- US Air Force Summer Faculty Fellowship, 2016
- Best Paper Award, WISA 2014
- Best Poster Award, IEEE CNS 2013
- Dissertation Fellowship, University of Minnesota, 2011

## Sumanta Pattanaik



### Associate Professor

Ph.D., Computer Science;  
Birla Institute of Technology and Science, Pilani, India, 1993

### Contact

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407-823-2638

### Research

Computer Graphics Lab: <http://graphics.cs.ucf.edu/>

- *Medical Volume Visualization*
- *Real-time Realistic Rendering, Material Modeling*
- *Nature Rendering*
- *Interactive Global Illumination*
- *High Dynamic Range Imaging & Display*

### Other Experience

- Visiting Faculty: University of Southern California, Summer and Fall 2015; Yale University, Fall 2008; University of Girona, Spain, Spring and Summer 2009.
- Visiting Researcher: Imaging and Visualization Group, NCI-NIH, Summer 2016.
- Research Associate, Program of Computer Graphics, Cornell University, 1995-2001
- INRIA Post-Doctoral Fellow, IRISA-INRIA, Rennes, France, 1993-1995
- Senior Staff Scientist, National Center for Software Technology (NCST), Bombay, India, 1985-95

### Professional Activities

- Program Committee Member: I3D 2017, SCCG 2017.

### Honors & Awards

- UCF TIP Award, 2011.

### Active Grants

- *NSF Grant- 2012-2017:* A Unified Approach to Material Appearance Modeling
- UArizona-DARPA Grant (2016-2018). REVEAL: Light Field Measurement and Exploitation at Information Theoretic Limits

### Recent Book

- *High Dynamic Range Imaging*, 2nd Edition, 2010. Coauthors: Reinhard, Ward, Pattanaik, Debevec, Heidrich, Myszkowski, Publisher: Morgan Kaufman.
- *Introduction to Computer Graphics: A Practical Learning Approach*. 1st Edition 2014. Coauthors: Ganovelli, Corsini, Pattanaik, Benedetto. Publisher: Chapman & Hall/CRC (Computer Graphics, Geometric Modeling, and Animation)

### Recent Publication

- LeGendre, Yu, Liu, Busch, Jones, Pattanaik, Debevec, "Practical Multispectral Lighting Reproduction", SIGGRAPH 2016.



## Yogesh Singh Rawat



### Assistant Professor

Ph.D., National University of Singapore, 2017

### Contact

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407-435-0999

### Research

- Deep Learning for Computer Vision
- Video Understanding
- Human Activity Detection
- Multimedia Computing
- Media Aesthetics

### Other Experience

- Postdoctoral Associate  
University of Central Florida, 2017-2019
- Senior Member Technical Staff  
Mentor Graphics, India, 2009- 2012

### Professional Activities

- Program committee member: ACM International Conference on Multimedia (2017, 2018, 2019), IEEE Winter Conference on Applications of Computer Vision (2017, 2018, 2019, 2020), IEEE International Conference on Multimedia and Expo (2019), IEEE International Conference on Multimedia Information Processing and Retrieval (2018, 2019)
- Journal reviewer: IEEE Transactions on Multimedia, IEEE Transactions on Circuits and Systems for Video Technology, ACM Transactions on Multimedia Computing, Communications, & Applications, IEEE Transactions on Cybernetics, Journal of Visual Communication and Image Representation, Journal of Image and Vision Computing, Journal of Information sciences.
- Tutorial organizer at CVPR 2019, Capsule network for computer vision.

### Honors & Awards

- DARPA award, KAIROS, 2019
- Runners-up, ActEV Challenge for Activity Detection, TRECVID, Nov 2018
- Second runners-up, ActEV Challenge for Activity Object Detection, TRECVID, Nov 2018
- Research Achievement Award for outstanding research performance, NUS, Jan 2016
- Finalist at ACM Multimedia Grand Challenge, Amsterdam, Oct 2016
- Finalist at ACM Multimedia Grand Challenge, Orlando, Nov 2014

## Dirk Reiners



### Associate Professor

Ph.D., Technical University of Darmstadt, 2002

### Contact

[dirk.reiners@ucf.edu](mailto:dirk.reiners@ucf.edu)

407-823-1397

### Research

- Rendering Systems for Virtual and Augmented Reality
- Immersive Display Systems
- Interactive Visualization of Large Data
- Applications of Virtual and Augmented Reality

### Other Experience

- CTO, CG Heroes LLC, 2018-
- Associate Professor, University of Arkansas at Little Rock, 2015-2019
- Assistant / Associate Professor, University of Louisiana at Lafayette, 2006-2015
- Assistant Professor, Iowa State University, 2003-2006
- Senior Researcher in Virtual Reality Rendering, Fraunhofer Institute for Computer Graphics, Darmstadt, Germany, 1994-2003

### Professional Activities

- Papers Chair: ICAT 2016
- Associate Editor, VR and Industry, Frontiers in Virtual Reality Journal
- Panel Reviewer NSF
- Organizing Chairs Committee: IEEE Virtual Reality 2019 (Best Dissertation Co-Chair), 2017 (Workshop Chair), 2016 (Exhibits Chair), 2015 (Research Demo Chair), 2014 (Workshop Chair), 2009 (Local Co-Chair); ISMAR 2018 (Sponsorship Chair), ICAT 2016 (Local Co-Chair)
- Program committee member: IEEE VR (2020-2008), ISMAR, others
- Reviewer: IEEE VR, ACM SIGGRAPH, VRST, ISMAR, 3DUI, AutoUI, others

### Honors & Awards

- Best Paper Award, IEEE Virtual Reality 2009
- Best Paper Award, IITSEC 2005
- Winner, Sikorsky Entrepreneurial Challenge 2014 (with Dirk Reiners and Don Pierce)
- Invited Presentations at VRDays Europe 2018, Virtual Reality Summit, Seoul, South Korea, June 2016

## Mubarak A. Shah



### Trustee Chair Professor

Ph.D., Computer Science; Wayne State University, 1986  
Secondary Joint Appointment in College of Optics and Photonics  
Secondary Joint Appointment in Department of Mathematics

### Contact

[shah@crcv.ucf.edu](mailto:shah@crcv.ucf.edu)

407-823-5077

Assistant: Cherry Place 407-823-4952

### Research

Center for Research in Computer Vision: <http://crcv.ucf.edu/>

- *Video Surveillance and Monitoring*
  - Visual Tracking
  - Scene and Object Recognition
  - Human Activity Recognition
  - UAV Video Analysis
- *Video Registration*
- *Video Categorization and Segmentation*
- *3D reconstruction*
- *Content-based Video Retrieval*

### Professional Activities

- Series Editor, *Video Computing*, Int'l book Series, Springer, 2000-
- Editor-in-Chief, *Machine Vision & Applications*, Springer, 2004-2015
- Associate Editor *ACM Computing Surveys*, 2006-2015
- Program Co-Chair, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2008

### Honors & Awards

- Fellow, NAI (2020) IEEE (2003), AAAS (2000), IAPR (2008), SPIE, 2008
- ACM SIGMM award for Outstanding Technical Contributions to Multimedia Computing, Communications and Applications 2019.
- NGA (National Geo-spatial Intelligence Agency) Best Research Poster award at NARP Symposium Award, 2013.
- University Excellence in Research Award, 2005, 2012, 2017
- CECS Advisory Board Award for Faculty Excellence, 2011
- Scholarship of Teaching and Learning Award, 2011
- UCF Distinguished Researcher Award, 2007
- SANA Award, 2007
- Pegasus Professor Award, 2006
- UCF Millionaires' Club award, 2005, 2006, 2009, 2010
- Honorable mention, ICCV 2005 Where Am I? Challenge Problem.
- UCF Research Incentive Award, 2003, 2009
- ACM Distinguished Speaker (DSP), 2008-2014.
- IEEE Distinguished Visitors Program Speaker, 1997-2000
- Engineering Achievement Award, Harris Corp. Information Systems Div., 1999
- Outstanding Engineering Educator, IEEE 1997
- UCF Teaching Incentive Program Award, 1996, 2003

## Yan Solihin



### Director, Cybersecurity & Privacy Cluster

### Charles N. Millican Chair Professor

Ph.D., Computer Science; University of Illinois at Urbana-Champaign, 2002

### Contact

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407-823-4191

### Research

Homepage: <https://sites.google.com/view/arpers>

- *Secure Execution Environment*
  - Trustworthy cloud, enclaves
  - Side channels (microarchitecture, timing, caches, etc.)
  - Memory encryption and integrity verification
- *Computer Architecture*
  - *Parallel and multicore architecture*
  - *Memory hierarchy and memory systems*
  - *Persistent memory*

### Professional Activities

- Program Chair, IEEE Intl. Symp. on High Performance Computer Architecture (HPCA), 2020.
- General Co-Chair, IEEE Intl. Symp. on Workload Characterization (IISWC), 2019.
- Steering Committee Chair, IISWC.
- NSF Program Director, 2015-2018
- Notable Presentations
  - Keynote Presentation at ISL VLSI 2019
  - ECE Distinguished Lecture, GWU, 2019
  - Keynote Presentation at Future Digital Finance, 2019
  - Cadence Distinguished Speaker, 2018
  - Keynote Presentation at ICCD 2017
  - Keynote Presentation at IEEE SmartCloud 2017
- GWU ECE Advisory Board member, 2018 - present

### Honors & Awards

- ACM Distinguished Speaker (2019-2022)
- ISCA Hall of Fame (2018)
- HPCA Hall of Fame (2011)
- IEEE Fellow (2017)
- MICRO Best Paper Runner-Up (2017)
- Outstanding mentoring of young faculty (2016)
- "Thank a Teacher" recipient (F2013, S2014, F2014, F2015)
- ISPASS Best Paper Finalist (2013)
- IPDPS Best Paper Finalist (2012)
- IEEE Micro Top Picks (2011)
- IBM Faculty Partnership Award (2010, 2005)
- Waseda GCOE Visiting Professor (2008)
- HPCA Best Paper Finalist (2005)
- NSF CAREER Award (2004)

## Gita R. Sukthankar



### Associate Professor

Ph.D., Robotics; Carnegie Mellon University, 2007

### Contact

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407-823-4305

### Research

<http://www.cs.ucf.edu/~gitaras/>

<http://ial.cs.ucf.edu/>

- *Multi-agent systems*
- *Machine learning*
- *Activity/plan recognition for:*
  - *Games and simulation systems*
  - *Assistive technologies*
  - *Human-robot interaction*
- *Social-computational systems*

### Other Experience

- HP Labs - Cambridge Research Laboratory  
Member of Research Staff, 2000–2003
- PARC – Sabbatical Visitor, 2015-2016

### Professional Activities

- General chair, International Conference on Autonomous Agents and Multi-agent Systems (2020)
- Program chair, International Conference on Autonomous Agents and Multi-agent Systems (2018)
- DARPA ISAT Advisory Group (2015-2018)
- IFAAMAS Board of Directors (2016-2022)
- Co-chair AAAI Symposium Series (2012-2017)
- General chair, AAAI Conference on AI and Interactive Digital Entertainment (2013)
- Edited books Plan, Activity, and Intent Recognition: Theory and Practice and Social Interaction in Virtual Worlds

### Honors & Awards

- UCF Reach for the Stars Award (2015)
- CECS Dean's Research Professorship Award (2013)
- UCF Research Incentive Award (2013)
- UCF Faculty Excellence for Doctoral Mentoring (Engineering and Sciences) (2012)
- ACM and IEEE Senior Member
- CECS Distinguished Researcher (asst. professor), 2010
- Charles N. Millican Faculty Fellow (2010, 2012)
- DARPA Computer Science Study Group, (2009)
- NSF CAREER (2009)
- Air Force Young Investigator Program (2009)
- ONR Summer Faculty Fellow (2008)

## Sharma Thankachan



### Assistant Professor

Ph.D., Computer Science;  
Louisiana State University, 2014

### Contact

[sharma.thankachan@ucf.edu](mailto:sharma.thankachan@ucf.edu)

### Research <http://www.cs.ucf.edu/~sharma/>

- *Parallel and External Memory Algorithms*
- *Algorithms for Sequence Analysis, Motivated from Applications in Bioinformatics*
- *Advanced Data Structures for*
  - Succinct/Compressed Text (String) Indexing
  - Information Retrieval and Databases
  - Geometric Range Query Problems

### Other Experience

- Research Scientist/Post-Doctoral Fellow (2014–2016): School of Computational Science and Engineering, Georgia Institute of Technology, Atlanta.
- Post-Doctoral Fellow (2014-2014): School of Computer Science, University of Waterloo, Canada

### Professional Activities (Program committee member)

- [HiPC](#) 2017: 24th IEEE International Conference on High Performance Computing, Data, and Analytics).
- [BCB](#) 2017: ACM International Conference on Bioinformatics, Computational Biology, and Health Informatics).
- [HiCOMB](#) 2017: 16th IEEE International Workshop on High Performance Computational Biology)
- ICCABS 2017: IEEE International Conference on Computational Advances in Bio and Medical Sciences.

### Honors & Awards

- Dissertation year Fellowship (2013-2014), Louisiana State University.

### Active Grants

- NSF grant (2017-2020): Sequential and Parallel Algorithms for Approximate Sequence Matching with Applications to Computational Biology (\$ 290,000)



## Damla Turgut



### Charles N. Millican Professor of Computer Science

Ph.D., University of Texas at Arlington, 2002

Secondary Joint Appointment in Electrical & Computer Engineering

#### Contact

[turgut@cs.ucf.edu](mailto:turgut@cs.ucf.edu)

407-823-6171

#### Research

<http://www.cs.ucf.edu/~turgut>

- *Wireless networks*
  - Value of information (VoI)
  - Ad hoc, sensor, underwater & vehicular networks
- *Internet of Things (IoT)*
  - Value of information & Augmented Reality
  - Smart cities & IoT-enabled healthcare
- *Data analytics and machine learning*

#### Other Experience

- Visiting Researcher: KTH, Sweden (2018-2019), University of Rome – La Sapienza, Italy (2012); Imperial College, UK (2011)
- Assistant Instructor, Dept. CSE, UT Arlington, 1999-2002
- Faculty Associate, CAESAR, UT Arlington, 1997-1998

#### Professional Activities

- Associate Editor: Elsevier Ad Hoc Networks
- General Chair: IEEE LCN
- TPC Chair/Co-Chair: IEEE CCNC, GLOBECOM, ICC, LCN
- Panel Reviewer: NSF, NSERC, Austrian Science Fund

#### Honors & Awards

- UCF Research Incentive Award (RIA) (2019)
- UCF Women of Distinction Award (2018)
- University Excellence in Professional Service Award (2017)
- UCF Teaching Incentive Program (TIP) Award (2017, 2009)
- Featured in 2015 UCF Woman Making History
- UCF iSTEM Faculty Fellow (2014)
- Best paper award, IEEE ICC 2013

#### Selected Publications

- J. Xu, R. Rahmatizadeh, L. Bölöni, and D. Turgut. Real-time Prediction of Taxi Demand Using Recurrent Neural Networks. *IEEE Trans. on Intelligent Transportation Systems*, 19(8):2572–2581, August 2018.
- D. Turgut and L. Bölöni. Value of Information and Cost of Privacy in the Internet of Things. *IEEE Communications Magazine*, 55(9):62–66, September 2017.
- L. Bölöni and D. Turgut. Value of Information based Scheduling of Cloud Computing Resources. *Future Generation Computer Systems Journal* (Elsevier), 71:212–220, June 2017.
- G. Solmaz, M.I. Akbas, and D. Turgut. A Mobility Model of Theme Park Visitors. *IEEE Trans. on Mobile Computing (TMC)*, 14(12):2406–2418, Dec. 2015.

## Liqiang Wang



### Associate Professor, Graduate Coordinator

Ph.D., Computer Science; Stony Brook University, 2006

#### Contact

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407-823-3187

#### Research

<http://www.cs.ucf.edu/~lwang/>

- *Big Data, Cloud Computing, and High-Performance Computing*
  - Performance and Scalability Optimization
  - Big Data Analytics
- *Machine Learning*
  - AI Security
  - Robustness and Resilience
  - Distributed Machine Learning
- *Program Analysis*
  - Concurrency Error Detection
  - Software Resilience

#### Other Experience

- Visiting Research Scientist (Sabbatical Leave), IBM T.J. Watson Research Center, 2012 -2013
- Professor (Associate, Assistant), Computer Science, University of Wyoming, 2006 – 2015

#### Professional Activities

- Chair, the 15th IEEE International Conference on Pervasive, Intelligence and Computing (PCom 2017, 2018)
- Doctoral Symposium Chair, the 2018 IEEE International Conference on Cloud Engineering (IC2E)
- Chair, IEEE International Workshop on Scientific Workflows and Big Data Sciences (SWF). 2010-2014
- Track Chair, IEEE Cloud Computing 2016, ICWS 2017
- Senior TPC Member, IEEE BigData 2014, 2017-2019
- Guest Editor: *Journal of Security and Communication Networks*.
- NSF Committee on Software Infrastructure for Heterogeneous Computing, 2016, 2017
- Panel Reviewer: NSF, NASA, Research Grants Council (RGC) of Hong Kong

#### Honors & Awards

- Best Paper Award, IEEE CyberSciTech, 2018
- Overseas Scholars Collaborative Research Award, NSFC, 2014
- Castagne Faculty Fellowship Award, 2013-2015
- NSF CAREER Award, 2011
- NSF TeraGrid Fellowship, 2009
- Best Paper Award, IBM Verification Conference, 2005

## Gregory F. Welch



### **Pegasus Professor and AdventHealth Endowed Chair in Healthcare Simulation**

Ph.D., Computer Science; UNC Chapel Hill, 1996

Primary Appointment: College of Nursing

Secondary Appointment: Department of Computer Science

Secondary Appointment: Institute for Simulation & Training

Adjunct Appointment: UNC Chapel Hill, Computer Science

#### **Contact**

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407-796-2823

#### **Research**

Co-Director, Synthetic Reality Lab: <http://sreal.ucf.edu>

- *Virtual and Augmented/Mixed Reality*
  - Human motion tracking/capture systems
  - Displays (head-worn, fixed, projector-based, etc.)
- *Human-Computer Interaction*
  - Human surrogates (virtual and physical avatars)
  - Interactive computer graphics systems and devices
- *Healthcare applications*
  - *Patient simulation systems*
  - *Situational awareness during procedures*
- *Stochastic estimation (Kalman filters, etc.)*

#### **Other Experience**

- Research Professor (Associate, Assistant), Computer Science, UNC Chapel Hill, 1996–2012
- Northrop Defense Systems Division, 1990–1992
- NASA Jet Propulsion Laboratory, 1987–1990

#### **Professional Activities**

- World Economic Forum, Global Future Councils, Council on Virtual Reality and Augmented Reality (2018-present)
- Associate Editor of journals Presence: Teleoperators and Virtual Environments and Frontiers in Virtual Environments
- IEEE VR 2018 & 2019 Program Co-Chair
- IEEE VR 2013 General Co-Chair
- ISMAR 2012 General Co-Chair
- Dagstuhl Seminar on “Virtual Realities” (2008, 2012)
- Over 150 refereed publications, 12 patents, several pending
- Internationally-recognized “Kalman filter” web site

#### **Honors & Awards**

- UCF Chapter of National Academy of Inventors
- IEEE Technical Expert for Virtual, Augmented and Mixed Reality 2018
- “Long Lasting Impact Paper” award, ISMAR 2016.
- IEEE Outstanding Performance, Co-Chair, VR 2013
- 1995 “An Introduction to the Kalman Filter” cited over 8,000 times according to Google Scholar
- Senior Member, IEEE Computer Society and Member, ACM
- Pioneer, ACM SIGGRAPH
- Excellence in Teaching award, UNC-Chapel Hill, 2007

## Elaine Weyuker



### **University Distinguished Professor**

Ph.D., Computer Science;

Rutgers University, 1977

#### **Contact**

[Elaine.Weyuker@ucf.edu](mailto:Elaine.Weyuker@ucf.edu)

#### **Research**

Dr. Weyuker’s research interests focus on broad areas of software engineering, and particularly software fault prediction, software testing and software metrics and measurement. She is known for doing large industrial empirical studies to validate many of her proposed research solutions. In an earlier life, Dr. Weyuker did research in Theory of Computation and is the co-author of a book "Computability, Complexity, and Languages" with Martin Davis and Ron Sigal.

#### **Other Experience**

Prior to joining UCF in 2017 Dr. Weyuker was an AT&T Fellow and Distinguished Member of the Technical Staff doing software engineering research at AT&T Labs. Earlier, she was a professor of Computer Science at NYU's Courant Institute of Mathematical Sciences.

#### **Professional Activities**

Dr. Weyuker has served as a member of the Rutgers University Graduate Dean's Advisory Board since 2004, served as the chair of ACM's Council on Women in Computing (ACM-W) from 2004-2012, as a member of the Executive Committee of the Coalition to Diversify Computing from 2003-2016, as well as a member of the Board of Directors of the Computing Research Association from 2000-2005.

Dr. Weyuker has served on the editorial boards of several journals including *J. Empirical Software Engineering*, *J. Software and Systems*, *IEEE Trans. Software Engineering*, *IEEE Trans. Dependable and Secure Computing*, *IEEE Spectrum*, and *ACM Trans. Software Engineering and Methodology*.

#### **Honors & Awards**

Dr. Weyuker has served as a member of the Rutgers University Graduate Dean's Advisory Board since 2004, served as the chair of ACM's Council on Women in Computing (ACM-W) from 2004-2012, as a member of the Executive Committee of the Coalition to Diversify Computing from 2003-2016, as well as a member of the Board of Directors of the Computing Research Association from 2000-2005.

In 2009 one of her publications won the ACM SIGSOFT Retrospective Impact Paper Award for a highly influential paper that has continued to have impact on the field for more than 25 years. Among her other awards are the AT&T Chairman's Diversity Award.

## Pamela Wisniewski



### Assistant Professor

Ph.D., Computer and Information Systems;  
University of North Carolina at Charlotte, 2012

### Contact

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407-823-3189

### Research

Socio-Technical Interaction Research Lab: <https://stirlab.org>  
iUX Academy: <http://www.cs.ucf.edu/ux/>  
Human-Computer Interaction (HCI), User Experience (UX), Social Computing, Privacy, and Adolescent Online Safety.

- Sociotechnical research at the intersection of understanding people and designing technologies to meet their needs
- Adolescent risk and resilience in online contexts

### Other Experience

- Postdoctoral Scholar in the College of Information Science and Technology, the Pennsylvania State University, 2013-2015

### Professional Activities

- Director of the Socio-technical Interaction Research (STIR) Lab and the industry User Experience (iUX) Academy
- Founding Member: *Florida Interactive Computing Consortium, Cyberbullying Prevention Research Collaborative*
- Advisor Board Member: *Children's Online Privacy and Commercial Use of Data*
- Associate Editor/Program Committee: *ACM's Transactions on Social Computing*, GROUP 2020, CHI 2019, CSCW 2019, CSCW 2018, GROUP 2020, GROUP 2018
- Journal reviewer: *New Media & Society*, *Internet Research*, *Journal of the Association for Information Systems*, *Information Systems Journal*, *Human-Computer Interaction*, *Journal of Computer-Mediated Communications*
- Conference Proceedings reviewer: *Human Factors in Computing Systems (CHI)*, *Computer Supported Cooperative Work and Social Computing (CSCW)*, *International Conference on Information Systems (ICIS)*, and *Americas Conference on Information Systems (AMCIS)*

### Honors & Awards

- Marchioli Collective Impact Innovation Award, 2020
- ACM Senior Member, 2020
- William R. Jones Outstanding Mentor Award, 2020
- NSF CAREER Award, 2019
- UCF Reach for the Stars Award, 2019
- William W. Grant Early Career Scholars Award, 2018
- Inaugural Member of ACM's Future Computing Academy, 2017
- Best Paper Awards: CHI 2019, VRST 2018, SUI 2018, CHI 2016, CHI 2015
- Best Paper Honorable Mentions: CHI 2020, CSCW 2015, CHI 2014

## Pawel Wocjan



### Associate Professor

Ph.D., Computer Science  
Karlsruhe Institute of Technology, 2003

### Contact

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407-823-2844

### Research

Interdisciplinary Research in Quantum Computing and Quantum Information Science  
<http://www.cs.ucf.edu/~wocjan>

- Classical and Quantum Algorithms
- Quantum Information Theory
- Simulation of Quantum Systems
- Graph Theory

### Other Experience

- Visiting Associate Professor, Center for Theoretical Physics, Massachusetts Institute of Technology, sabbatical leave 2012-2013
- Postdoctoral Scholar in Computer Science, Institute for Quantum Information, California Institute of Technology, 2004-2006
- Research Assistant, Department of Computer Science, University of Karlsruhe, Germany, 1999-2004

### Professional Activities

- Panelist and Reviewer for National Science Foundation
- Reviewer for Journals on Quantum Computing and Quantum Information Theory

### Honors & Awards

- National Science Foundation CAREER Award for "*Algebraic Approach to the Design of Novel Quantum Algorithms*" in 2008
- UCF Research Incentive Award in 2011

## Annie S. Wu



### Associate Professor

Ph.D., Computer Science and Engineering;  
University of Michigan, 1995

### Contact

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407-823-5922

### Research

Director: UCF Evolutionary Computation Laboratory  
<http://www.cs.ucf.edu/~ecl/>

- *Genetic Algorithms*
- *Swarm Robotics*
- *Evolutionary Computation*
- *Complex Adaptive Systems*
- *Multi-agent Systems*
- *Machine Learning*

### Other Experience

- National Research Council Postdoctoral Research Associate, Naval Research Laboratory, 1996-1999

### Professional Activities

- Editorial Board Member, Evolutionary Computation Journal
- Editorial Board Member, Memetic Computing Journal
- Panelist, National Science Foundation
- Program Co-Chair, Foundations of Genetic Algorithms X, January 2009
- Publicity Chair, 2008 Genetic and Evolutionary Computation Conference
- Executive Board, ACM Special Interest Group for Genetic and Evolutionary Computation (SIGEVO), 2005-2009
- Executive Board, International Society for Genetic and Evolutionary Computation, 2002-2004

### Honors & Awards

- UCF Teaching Incentive Program Award, 2019
- Excellence in Graduate Teaching Award, UCF College of Engineering and Computer Science, 2017
- National Research Council Research Associateship Award, 1996-1999

## Shibu Yooseph



### Professor

Ph.D., Computer and Information Science;  
University of Pennsylvania, 1997

### Contact

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407-823-5307

### Research <http://www.cs.ucf.edu/~syooseph/>

- Algorithm design and combinatorial optimization
- Computational Biology and Bioinformatics: Genomics; Metagenomics; Sequence Assembly; Phylogenetics; Clustering and Ordination; Functional Genomics; Homology Detection; Biomarker Discovery; Machine Learning
- Microbiome research: Host-microbiome associations and mechanisms in the context of health and disease; Microbial diversity in different environments including water and air; Analysis and integration of '-omics' data

### Other Experience

- Human Longevity Inc. (2014-2016): Senior Director of Bioinformatics / Microbiome Lead
- J. Craig Venter Institute (2003-2016)
  - Professor of Informatics (2014-2016)
  - Director of Informatics, San Diego (2009-2011)
  - Associate Professor of Informatics (2009-2013)
  - Senior Computational Scientist (2003-2008)
- Celera Genomics (2000-2003): Computer Scientist
- University of Southern California (1998-2000): Research Associate
- DIMACS, Rutgers University (1997-1998): Postdoctoral Fellow
- Lucent Technologies, Bell Labs (1997-1998): Consultant

### Professional Activities

- On editorial board of Microbiome journal
- Ad-hoc reviewer for various journals including Nature, Nucleic Acids Research, Bioinformatics, and PLOS
- Served on several NSF and NIH Review Panels
- Program Committee member for several recent conferences including WABI 2019, BIOKDD 2019, AICoB 2018, AICoB 2017, and ICCABS 2017.

### Honors & Awards

- Over 30,000 citations of research articles (source Google Scholar)
- Several publications recommended by Faculty of 1000
- GRASP algorithm featured in Biotechniques (2015)
- Postdoctoral Fellowship from NSF funded Program in Mathematics and Molecular Biology (1998-2000)
- Postdoctoral Research Fellowship from NSF funded DIMACS (1997-1998)
- Graduate Fellowships from PMMB (1995-1997), IRCS (1995-1997), UPenn (1993-1995)
- Dean's Fellowship (1992-1993)

## Shaojie Zhang



### Professor

Ph.D., Computer Science;  
University of California, San Diego, 2007

### Contact

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### Research

Computational Biology and Bioinformatics  
<http://www.cs.ucf.edu/~shzhang>

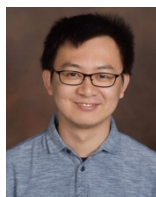
### Professional Activities

- Program Committee Co-Chair, IEEE ICCABS 2017
- Organizing Committee Member, IDASH Privacy & Security Workshop (2017, 2018)
- Organizing Committee Member, RECOMB Satellite Conferences on Systems Biology and Computational Proteomics (2006)
- Program Committee Member, IEEE ICCABS 2011 – 2014, 2017, 2018, ACM-BCB 2011, 2012, 2013, IEEE BIBM 2011 – 2020, RECOMB-SEQ 2013 – 2015, 2018, 2019, WBAI 2017, 2018, ICIBM 2018-2020, APBC 2019-2020, BIOKDD 2019, 2020, and others
- Associate Editor, Frontiers in Bioinformatics and Computational Biology
- Review Editor, Frontiers in Non-Coding RNA
- Reviewer for Israel National Foundation, Austrian Science Fund, and Fonds de recherche du Québec – Nature et technologies
- Member, The RNA Society
- Member, The American Society of Human Genetics
- Member, International Society for Computational Biology

### Honors & Awards

- UCF Research Incentive Award, 2019
- UCF Teaching Incentive Program Award, 2017
- Faculty Member, Upsilon Pi Epsilon (UPE) Honor Society for Computing and Information Disciplines, 2016
- Best Paper Award, ASP-DAC 2016
- Best Paper Award, IEEE ICCABS 2012
- J. Craig Venter Institute Summer Fellowship, 2006
- California Institute for Telecommunications and Information Technology (CalIT2) Fellowship, 2001

## Wei Zhang



### Assistant Professor

Ph.D., Computer Science;  
University of Minnesota-Twin Cities, 2015

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407-823-2763

### Research <http://server.cs.ucf.edu/compbio/>

- Computational Biology and Bioinformatics
  - Cancer Transcriptome
  - Biomarker Identification
  - Post-transcriptional Regulation
  - Drug Sensitivity Prediction
- Machine Learning
  - Network-based Learning
  - Semi-supervised Learning
  - Reinforcement Learning
  - Transfer Learning

### Other Experience

- Research Associate, University of Minnesota-Twin Cities (2015-2017)
- Research Intern, Takeda Pharmaceuticals Company (2014)

### Professional Activities

- ACM-BCB 2019 Workshop Chair
- ICIBM 2020 Publication Chair
- Program Committee Member: ICDM 2018-2020, ACM-BCB 2018-2020, ICCABS 2017-2020, BioKDD 2019-2020
- NSF panel member (2018-2020)
- Reviewers for Nucleic Acids Research, Bioinformatics, PLoS One, BMC Bioinformatics, BMC Genomics, and others

### Honors & Awards

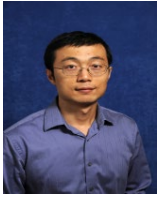
- NSF CRII (2018)
- Best Poster Award, The 6th Annual Biomedical Informatics and Computational Biology Research Symposium (2014)

### Selected Publications

- Jae-Woong Chang, Hsin-Sung Yeh, Meeveon Park, Luke Erber, Jaio Sun, Sze Cheng, Alexander M. Bui, Naima Ahmed Fahmi, Ryan Nasti, Rui Kuang, Yue Chen, Wei Zhang#, and Jeongsik Yong#. mTOR-regulated U2af1 tandem exon splicing specifies transcriptome features fix translational control. *Nucleic Acids Research*, 2019.
- Jae-Woong Chang\*, Wei Zhang\*, Hsin-Sung Yeh, et al. An Integrative Model for Alternative Polyadenylation, IntMAP, Delineates mTOR-modulated Endoplasmic Reticulum Stress Response. *Nucleic Acids Research*, 2018.
- Wei Zhang, Jeremy Chien, Jeongsik Yong, and Rui Kuang. Network-based Machine Learning and Graph Algorithms for Precision Oncology. *npj Precision Oncology*, 2017.
- Jae-Woong Chang\*, Wei Zhang\*, Hsin-Sung Yeh, et al. mRNA 3'UTR Shortening is a Molecular Signature of mTORC1 Activation. *Nature Communications*, 2015.



## Cliff C. Zou



### Associate Professor

#### Program Coordinator, Digital Forensics Master Program

Ph.D., Electrical & Computer Engineering;  
University of Massachusetts-Amherst, 2005

### Contact

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407-823-5015

### Research

Computer and Network Security  
<http://www.cs.ucf.edu/~czou/>

### Professional Activities

- Program Co-chair: WNS(2006), Malware(2010), CSS(2011)
- Session Chair: WORM (2006), SecureComm (2008), Malware (2008), AsiaCCS(2010), CCNC (2013), Globecom (2017)
- Local Chair: ANCS (2007), ICNP (2008), Ubicomp (2009), Multimedia (2014), IoTDI (2018), IC2E (2018), Securecomm (2019)
- Program Committee Member for dozens of conferences
- NSF panelist (2011,2016); NIH panelist (2014)
- Senior Member: IEEE

### Honors & Awards

- Publications have more than 6100 citations according to Google Scholar Citation.
- Best Student Paper Award in conference ACSAC 2007.
- Received UCF Teaching Incentive Program (TIP) award, 2013.
- Undergraduate research project "Personal Medication Monitor" won the first price in the first annual UCF Inventing Entrepreneurs Innovation Competition (reported by UCF News).
- Paper "Honeypot detection in advanced botnet attacks" published in IJICS (2010) was reported by EurekAlert! News Service and The Register, respectively.
- Rootkit work (paper published in Securecomm'08) was reported by PCWorld (05/09/2008).
- Research published in NDSS'06 reported by "New Scientist Magazine", Mar. 4, 2006 189(2541), pg. 32.
- Best Paper Award runner-up in PADS 2005.
- Best Paper Award runner-up in ICCCN 2004.
- Interviewed by National Public Radio (NPR) on our Internet worm research, September 2003