Gonzalo Vaca-Castano

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EDUCATION

Ph.D. in Electrical Engineering (Computer Vision) **GPA:4.0 (4.0 scale)**
University of Central Florida.
Expected graduation: Aug 2015

M.S. Electrical Engineering (Signal Processing) **GPA: 3.8 (4.0 scale)**
University of Puerto Rico- Mayaguez, PR. 2010
Thesis: A Framework for Anuran Monitoring, Species Classification and Bioacoustical Studies.

B.S. (Hons) Electronic Engineering **GPA 4.07 (5.0 scale)**
Pontificia Universidad Javeriana. Cali - Colombia . 2003
Thesis: Web-based learning system applied to control systems.

EXPERIENCE

Sighthound Summer 2015 - Now
Computer Vision Research Intern.

Bosch Research and Technology Center North America Summer 2014
Computer Vision Research Intern.
Developed and implemented a prototype for scene identification and object detection on indoor environments using first person camera videos captured using google glass.

- Developed a novel algorithm for identification of scenes using state of the art CNN
- Implemented a near real-time room identification system (~1 sec/frame) in server side (C++ , OpenCV).

University of Central Florida - Research/Teaching Assistant Aug 2010- May 2014

- Where am I? project

Developed an algorithm to find the trajectories traveled by a first person cameraman in urban scenarios. A dataset of geo-tagged images is used as reference to match visual features and estimate the trajectory of the person recording the video.

- Algorithm was tested in 45 videos from Downtown Pittsburgh and Orlando collected from youtube.

- Aladdin project

- Implemented and processed concept and object visual detectors in over 140K videos using a HPC computer cluster.

- Teaching Assistant: Electric circuits, Digital systems.

University of Puerto Rico- Research Assistant Jun 2008 - Jun 2010
Developed, built, and deployed a wireless solar powered system for remote acoustic monitoring of birds and amphibians in tropical forest with several Linux nodes forming a microphone sensor grid.

- Implemented linux scripts for audio capture, time synchronization, power saving, and data uploading.
- Developed an algorithm to identify species from their vocalizations.
- More details on SIPS 2010, EUPSIPCO 2010 papers.

Research & Development Engineer Jun 2005 – Dec 2007
Colombian Navy (DARET) – Cartagena, Colombia.

- Barracuda Project:

Developed and implemented algorithms in C++ for automatic visual target tracking, in a weapon system for Riverine Support Patrol Boats currently used by PAF units of Colombian Navy.

ASP.Net Web developer Sep 2003 - Jun 2005

Freelance (2005) - Illustrato tecnologias de la información (2003-2004)
Developed several Web based applications using .Net framework (Visual c# + SqlServer) for internal platforms of corporative clients (helpdesk, access control, travel reporting, among others).

PUBLICATIONS

"Semantic Image Search from Multiple Query Images". Gonzalo Vaca-Castano and Mubarak Shah. ACM Multimedia Conference, 2015.

"Improving Egocentric Vision of Daily Activities". Gonzalo Vaca-Castano, Samarjit Das, and Joao P Sousa. IEEE International Conference on Image Processing (ICIP), 2015.

"City Scale Geo-spatial Trajectory Estimation of a Moving Camera". Gonzalo Vaca-Castano, Amir Roshan Zamir and Mubarak Shah. IEEE International Conference on Computer Vision and Pattern Recognition(CVPR), 2012.

"Using syllabic Mel cepstrum features and k-nearest neighbors to identify anurans and birds species". Gonzalo Vaca-Castano, Domingo Rodriguez. IEEE Workshop on Signal Processing Systems (SIPS), 2010.

"A Framework for Bioacoustical Species Classification in a Versatile Service-Oriented Wireless Mesh Network". Gonzalo Vaca-Castano, Domingo Rodriguez, Julio Castillo, Kejie Lu, Alejandro Rios, Fernando Bird. 18th European Signal Processing Conference (EUSIPCO-2010).

OTHER STUDIES

B.S. Physics
Universidad del Valle. Cali-Colombia
1995 – 1999

SKILLS

- C++ , C .
- Python & Linux Shell scripting.
- Computer Vision Libraries (OpenCV, Caffe)
- Knowledge in development of web applications (php, ASP .Net, python).
- Spanish (native language)

HONORS

Daniel D. Hammond Engineering Endowed Scholarship. University of central Florida. 2015-2016

Graduate Research Excellence Fellowship. University of Central Florida. 2014-2015

Elizabeth S. Lampp Trust and Estate Endowed scholarship fund. University of Central Florida 2012

Academic and Human Excellence Honor Mention. 2003
BS Degree ceremony. Pontificia Universidad Javeriana Cali , Colombia.