

Javier Ribera

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http://ribera.me

Objective

To obtain an internship in deep learning applied to computer vision/image processing for Summer 2018.

Education

PhD Student, Electrical and Computer Engineering

Purdue University

Jan 2015 - Dec 2018

West Lafayette, IN

BS + MS, Telecommunications Engineering

Polytechnic University of Catalonia

Sep 2009 - Dec 2014

Barcelona, Spain

Experience

Research Assistant (Advisor: Prof. Edward Delp)

(ARPA-E Project) Video and Image Processing (VIPER) Lab. Purdue University

Jan 2016 - Present

West Lafayette, IN

- Design a new loss function for object localization without bounding boxes with $\geq 90\%$ accuracy.
- Develop a system based on CNNs and FCNs for plant location and counting from UAV images.
- Employ GANs for data augmentation.

Research Intern

Samsung Display America Lab

May - Aug 2017

San Jose, CA

- Develop a new image fidelity metric that can model any display and also models the Human Visual System.
- Goal: Evaluate visually lossless compression in Samsung displays.
- Result: This metric is better correlated with subjective evaluation than state-of-the-art metrics.

Research Assistant (Advisor: Prof. Edward Delp)

Video and Image Processing (VIPER) Lab. Purdue University

Feb 2014 - Dec 2015

West Lafayette, IN

Developed and used deep learning (CNNs, FCNs, GANs) and computer vision techniques for:

- Medical Imaging. Segment endocardium in echocardiograms and estimate heart ejection fraction.
- Visual Surveillance. Count people from videos. Improved accuracy by incorporating crowdsourcing.

Publications

1. "Counting Plants Using Deep Learning" – J. Ribera, Y. Chen, C. Boomsma, and E. J. Delp, *IEEE Global Conference on Signal and Information Processing (GlobalSIP)*, November 2017, Montreal, Canada
2. "Locating Crop Plant Centers From UAV-based RGB Imagery" – Y. Chen, J. Ribera, C. Boomsma, and E. J. Delp, *IEEE International Conference on Computer Vision Workshops*, October 2017, Venice, Italy
3. "Plant Leaf Segmentation For Estimating Phenotypic Traits" – Y. Chen, J. Ribera, C. Boomsma, and E. J. Delp, *IEEE International Conference on Image Processing*, September 2017, Beijing, China
4. "Pill Recognition Using Minimal Labeled Data" – Y. Wang, J. Ribera, C. Liu, F. Zhu, and E. J. Delp, *IEEE International Conference on Multimedia Big Data*, April, 2017, Laguna Hills, CA
5. "Estimating Phenotypic Traits From UAV Based RGB Imagery" – J. Ribera, F. He, Y. Chen, A. F. Habib, and E. J. Delp, *ACM SIGKDD Conference on Knowledge Discovery and Data Mining*, August 2016, San Francisco, CA
6. "Automatic and Manual Tattoo Localization" – J. Kim, H. Li, J. Yue, J. Ribera, L. Huffman, and E. J. Delp, *IEEE International Conference on Technologies for Homeland Security*, May 2016, Waltham, MA
7. "Characterizing The Uncertainty of Classification Methods and Its Impact on the Performance of Crowdsourcing" – J. Ribera, K. Tahboub, and E. J. Delp, *IS&T/SPIE Electronic Imaging*, February 2015, San Francisco, CA
8. "Automated Crowd Flow Estimation Enhanced by Crowdsourcing" – J. Ribera, K. Tahboub, and E. J. Delp, *IEEE National Aerospace & Electronics Conference* June 2014, Dayton, OH

Technical Skills

Programming	Python, C, MATLAB, Java, HTML5, Javascript, PHP, Bash
Libraries/Frameworks	TensorFlow, PyTorch, Torch, Numpy, OpenCV
Languages	Spanish (native), Catalan (native), French (intermediate)
System Administration	Linux

Volunteering

- Job fair organizer at home university. Contacted companies and managed logistics and budget.
- LinuxUPC student society. Promoted and taught the use of open source software and culture through workshops.