# Javier Ribera

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http://ribera.me

## Objective

To obtain a full-time position in deep learning applied to computer vision/image processing, starting January 2019.

## Education

**PhD Student, Electrical and Computer Engineering** — Jan 2015 - Dec 2018
Purdue University — *West Lafayette, IN*

**BS + MS, Telecommunications Engineering** — Sep 2009 - Dec 2014
Polytechnic University of Catalonia — *Barcelona, Spain*

## Experience

**Research Assistant (**Advisor**: Prof. Edward Delp)** — Jan 2016 - Present
(ARPA-E Project) Video and Image Processing (VIPER) Lab. Purdue University — *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** — May - Aug 2017
**Samsung** Display America Lab — *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)** — Feb 2014 - Dec 2015
Video and Image Processing (VIPER) Lab. Purdue University — *West Lafayette, IN*

Developed computer vision and image processing 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

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|---|---|
| **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

- Purdue Autonomous Driving Club - Vision/Programming Team
- Reviewer for IEEE Signal Processing Letters
- LinuxUPC student society. Promoted and taughted the use of open source software to university students.