

# Javier Ribera

javier@ribera.me

## Experience

### Co-founder

↪ Oqullo

8/2020 - Present  
Miami, FL

- Built from the ground-up a platform for foot traffic analytics using existing camera networks.
- Led a team of developers, designed roadmap, planned budget, and coordinated labeling efforts and sales prospecting.
- Developed a Pedestrian Tracking System across multiple cameras. Research and implementation on-premise and in AWS.
- Technologies used: CNN, TensorRT, Person-ReID, Docker, React

### Sr. Algorithm Engineer

↪ Samsung

Jan 2019 - Jul 2020  
San Jose, CA

- Researched and delivered Machine/Deep Learning models to evaluate the image quality of Samsung's new displays.
- Patented an objective visual quality evaluation of Samsung's display pipeline.
- Evaluated image quality, visually and quantitatively, with Python and Matlab simulations of displays and the Human Visual System.
- Technologies used: PyTorch, CNN, FCN, MLP, ELM, PSNR, SSIM, SCIELAB, ISETBIO

### Research Assistant

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

Jan 2016 - Dec 2018  
West Lafayette, IN

- Designed a new loss function for object localization without bounding boxes with  $\geq 90\%$  accuracy.
- Developed a system based on CNNs and FCNs for plant location and counting from UAV images.
- Used GANs for data augmentation.
- Published research at CVPR '19 (Top 1%), Best Paper Finalist Award \*\*

### Research Intern

↪ Samsung

May 2017 - Aug 2017  
San Jose, CA

- Developed a new image fidelity metric to evaluate visually lossless compression in Samsung's display pipeline.
- Result: Higher correlation with subjective evaluation than state-of-the-art metrics.

### Research Assistant

↪ Video and Image Processing (VIPER) Lab, Purdue University

Jan 2015 - Dec 2015  
West Lafayette, IN

Developed computer vision and image processing techniques for:

- Medical Imaging. Segmentation of endocardium in echocardiograms and estimate heart ejection fraction.
- Visual Surveillance. Counting pedestrian traffic from videos. Improved accuracy by incorporating crowdsourcing.

### Web developer and sysadmin

↪ boolino , Telefonica

Jul 2013 - Dec 2013  
Barcelona, Spain

- Developed front-end in AngularJS and Bootstrap, and backend in Django and PHP.
- System administration with Debian Linux

## Education

<b>PhD, Computer Engineering</b> (Advisor: Prof. Edward Delp) – Purdue University	West Lafayette, IN	Jan 2015 - Dec 2018
<b>BS, Telecommunications Engineering</b> – Polytechnic University of Catalonia	Barcelona, Spain	Sep 2009 - Dec 2014

## Research Publications (selected)

1. **\*\* Locating objects without bounding boxes** – CVPR. Best Paper Finalist Award (Top 1% of accepted papers), June 2019
2. **A machine learning approach to objective image quality evaluation** – Society of Information Display - Display Week, May 2019
3. **A subpixel-based objective image quality metric [...]** – Society of Information Display - Display Week, May 2018
4. **Counting plants using deep learning** – IEEE Global Conference on Signal and Information Processing (GlobalSIP), November 2017
5. **Locating crop plant centers from UAV-based RGB imagery** IEEE International Conference on Computer Vision (ICCV), October 2017
6. **Plant leaf segmentation for estimating phenotypic traits** – IEEE International Conference on Image Processing (ICIP), September 2017
7. **Pill recognition using minimal labeled data** – IEEE International Conference on Multimedia Big Data, April 2017
8. **Automatic and manual tattoo localization** IEEE International Conference on Technologies for Homeland Security, May 2016
9. **An intelligent crowdsourcing system for forensic analysis of surveillance video** – IS&T/SPIE Electronic Imaging, February 2015
10. **Automated crowd flow estimation enhanced by crowdsourcing** – IEEE National Aerospace & Electronics Conference, June 2014

## Technical Skills

<b>Programming Languages</b>	Python, C, MATLAB, Java, HTML5, Javascript, PHP
<b>Libraries/Tools</b>	TensorFlow, PyTorch, scikit-learn, Numpy, OpenCV, Git, AWS, GCP, Docker, Linux systems