Javier Ribera

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Experience

Co-founder 8/2020 - Present
↪ **Oqullo** *Miami, FL*

- Built from the ground-up a platform for foot traffic analytics using existing camera networks, implemented on-premise & in AWS.
- Developed deep learning Multi-Camera Multi-Object Tracker with focus on efficient massive inferencing.
- Owned product end-to-end, from the specification of the labeling ontology to the delivery of final analytics on the web dashboard.
- Technologies used: CNN, TensorRT, Person-ReID, Docker, React, ffmpeg, OpenCV

Sr. Algorithm Engineer Jan 2019 - Jul 2020
↪ **Samsung** *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, visualy 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 Jan 2016 - Dec 2018
↪ **(ARPA-E Project)** Video and Image Processing (VIPER) Lab, Purdue University *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 May 2017 - Aug 2017
↪ **Samsung** *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 Jan 2015 - Dec 2015
↪ **Video and Image Processing** (VIPER) Lab, **Purdue University** *West Lafayette, IN*

Developed computer vision and image processing techniques for:

- Medical Imaging. Segmention 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 Jul 2013 - Dec 2013
↪ **boolino , Telefonica** *Barcelona, Spain*

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

Education

PhD, Computer Engineering (Advisor: Prof. Edward Delp) – Purdue University *West Lafayette, IN* Jan 2015 - Dec 2018
BS, Telecommunications Engineering – 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

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