

Javier Ribera

javi.ribera@gmail.com

<http://ribera.me>

Experience

- Sr. Algorithm Engineer** Jan 2019 - Present
Samsung Display America Lab
San Jose, CA
- Design and deliver Machine/Deep Learning models to evaluate the image quality of Samsung's new displays.
- Research Assistant (Advisor: Prof. Edward Delp)** Jan 2016 - Dec 2018
(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 & 2018
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.
 - Evaluate ANNs and CNNs to estimate the perceived quality of an image distorted by a compression algorithm.
 - 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.

Education

- PhD, Electrical and Computer Engineering** Jan 2015 - Dec 2018
Purdue University
West Lafayette, IN
- BS, Telecommunications Engineering** Sep 2009 - Dec 2014
Polytechnic University of Catalonia
Barcelona, Spain

Publications (selected)

1. "A machine learning approach to objective image quality evaluation" – J. Ribera, G. W. Cook, D. Stoltzka, W. Xiong, *Society of Information Display - Display Week*, May 2019, San Jose, CA
2. "Locating objects without bounding boxes" – J. Ribera, D. Güera, Y. Chen, E. Delp, *Computer Vision and Pattern Recognition (CVPR) Best Paper Finalist Award (Top 1% of accepted papers)*, June 2019, Long Beach, CA
3. "A Subpixel-based objective image quality metric [...]" – G. W. Cook, J. Ribera, D. Stoltzka, W. Xiong, *Society of Information Display - Display Week*, May 2018, Los Angeles, CA
4. "Counting plants using deep learning" – J. Ribera, Y. Chen, C. Boomsma, E. J. Delp, *IEEE Global Conference on Signal and Information Processing (GlobalSIP)*, November 2017, Montreal, Canada
5. "Locating crop plant centers from UAV-based RGB imagery" – Y. Chen, J. Ribera, C. Boomsma, E. J. Delp, *IEEE International Conference on Computer Vision (ICCV) Workshops*, October 2017, Venice, Italy
6. "Plant leaf segmentation for estimating phenotypic traits" – Y. Chen, J. Ribera, C. Boomsma, E. J. Delp, *IEEE International Conference on Image Processing (ICIP)*, September 2017, Beijing, China
7. "Pill recognition using minimal labeled data" – Y. Wang, J. Ribera, C. Liu, F. Zhu, E. J. Delp, *IEEE International Conference on Multimedia Big Data*, April, 2017, Laguna Hills, CA
8. "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
9. "Characterizing the uncertainty of classification methods and its impact on crowdsourcing" J. Ribera, K. Tahboub, and E. J. Delp, *IS&T/SPIE Electronic Imaging*, February 2015, San Francisco, CA

Technical Skills

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

Volunteering

- Reviewer for IEEE Signal Processing Letters
- LinuxUPC student society. Promoted and taught the use of open source software to university students.