

JASPER TAN

Rice University
Department of Electrical and Computer Engineering
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RESEARCH INTERESTS

Privacy-preserving computational imaging
Lensless imaging, signal processing, machine learning

EDUCATION

PhD in Electrical and Computer Engineering

Rice University, May 2021 (expected)
Advisors: Dr. Richard Baraniuk and Dr. Ashok Veeraraghavan

MS in Electrical and Computer Engineering

Rice University, August 2018
Advisors: Dr. Richard Baraniuk and Dr. Ashok Veeraraghavan
Thesis: “Face detection and verification with FlatCam lensless imaging system”

BS in Electrical Engineering and Computer Science & Engineering, *summa cum laude*

Santa Clara University, June 2015
GPA: 3.99/4.00

ACADEMIC POSITIONS

Research Assistant

Department of Electrical and Computer Engineering, Rice University, 2016–Present

Undergraduate Research Assistant

Frugal Innovations Lab, Santa Clara University, 2014–2015

- Developed a lab-on-chip device for the microfluidic detection of arsenic

Undergraduate Research Assistant

Center of Nanostructures, Santa Clara University, 2013–2014

- Assisted in writing of a review paper on nanocontacts

SELECTED HONORS AND RESEARCH AWARDS

Rice University Ken Kennedy Engineering Enhancement Fellowship, 2015–2019
Rice University Texas Instruments Graduate Fellowship, 2015–2016
Student Life Award, Santa Clara University, 2015
Award for Research Excellence, Santa Clara University School of Engineering, 2015
Academic Achievement Award in Electrical Engineering, Santa Clara University, 2015
Outstanding Computer Engineering Senior Award, Santa Clara University, 2015
Senior Design Presentation Award, Santa Clara University School of Engineering, 2015
Upsilon Pi Epsilon, 2015
Alpha Sigma Nu, 2015
Carl H. Hayn Physics Prize, Santa Clara University, 2013
Tau Beta Pi, 2013
Merit Scholar, Ateneo de Manila University, 2011
Xavier Award, Xavier High School, 2007

PROFESSIONAL ACTIVITIES

University Service

Social Chair, Rice Electrical and Computer Engineering Graduate Student Association, 2019–2020
Secretary, Rice Electrical and Computer Engineering Graduate Student Association, 2016–2017
IEEE sophomore representative, Santa Clara University, 2012–2013

Reviewer

IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
International Conference on Computer Vision (ICCV)
Indian Conference on Computer Vision, Graphics, and Image Processing (ICVGIP)
Advances in Modeling and Learning Interactions (NeurIPS Workshop)
Neural Information Processing Systems (NeurIPS)

INDUSTRY POSITIONS

Computational Imaging Intern

Imaging Systems Group, Light Labs Inc., Redwood City, California, 2019

- Led a research project on image super-resolution
- Developed an intuitive graphical user interface for compactly serializing multi-camera system parameters

Technical Intern

Corporate Application Engineers, Synopsys Inc., Sunnyvale, California, 2013

- Tested and identified errors in place-and-route software tool

JOURNAL PUBLICATIONS

J. Tan, L. Niu, J. Adams, V. Boominathan, J. T. Robinson, R. G. Baraniuk, and A. Veeraraghavan, "Face Detection and Verification Using Lensless Cameras," in *IEEE Transactions on Computational Imaging*, vol. 5, no. 2, pp. 180-194, June 2019.

P. Wilhite, A. A. Vyas, J. Tan, **J. Tan**, T. Yamada, P. Wang, J. Park, and C. Y. Yang, "Metal-nanocarbon contacts", in *Semicond. Sci. Technol.*, vol. 29, no. 5, p. 054006, 2014.

CONFERENCE PAPERS

S. Khan, A. V. R, V. Boominathan, **J. Tan**, A. Veeraraghavan, and K. Mitra, "Towards photorealistic reconstruction of highly multiplexed lensless images," in *IEEE Int. Conf. Comput. Vision*, Oct. 2019 (*accepted; in press*)

J. Tan and C. S. Burrus, "Near-linear-phase IIR filters using Gauss-Newton optimization," in *IEEE Int. Midwest Symp. Circuits Syst.*, Aug. 2019

J. Tan, V. Boominathan, A. Veeraraghavan, and R. G. Baraniuk, "Flat focus: depth of field analysis for the FlatCam lensless imaging system," in *IEEE Conf. Acoust. Speech, Signal Process.*, Mar. 2017, pp. 6473–6477

J. Tan and S. G. M. Koo, "A survey of technologies in internet of things," in *IEEE Int. Conf. Distrib. Comput. Sensor Syst.*, May 2014, pp.269–274

PRESENTATIONS

"FlatCam: Thin Lensless Cameras Through Signal Processing," *IEEE International Conference on Acoustics, Speech, and Signal Processing*, New Orleans, Louisiana, March 2017.

"A Survey of Technologies in Internet of Things," *IEEE International Conference on Distributed Computing in Sensor Systems*, Marina Del Ray, California, May 2014.

OTHERS

Programming experience:

Languages: (from most experience to least) Python, Matlab, C++, C

Deep learning frameworks: (from most experience to least) Pytorch, MatConvNet