

Renyuan Zhang (Leo)

Research Assistant
Department of Electrical and Computer Engineering
University of Arizona
Tucson, AZ 85721

Phone: (520) 878-8630
Email: ryzhang@email.arizona.edu
Address: 2724 N Neruda Ln, Tucson, AZ 85712
GitHub: zrmaker

Summary of Qualifications

4+ years of research and engineering experience in the field of radar, automated driving, imaging and sensor networks.

Intensive experience in programming in MATLAB, C/C++, Python, Java and engineering related languages in Windows and Linux environment.

A strong self motivating ability and dedication to promoting effective teamwork. A strong ability to lead a research team.

Education

Ph.D. in Electrical and Computer Engineering Aug. 2015 - Present
University of Arizona

Research interest: radar signal processing, radar imaging, automotive radar, micro-doppler signatures.

M.S. in Optical Sciences Aug. 2013 - Aug. 2015
University of Arizona

Research interest: optical imaging, line CCD, optical coherence tomography.

B.S. in Optoelectronic Engineering Sept. 2009 - June 2013
Chongqing University

Publications

Journal Articles

R. Zhang and S. Cao, "3D Imaging Millimeter Wave Circular Synthetic Aperture Radar," *Sensors*, vol. 17, no. 6, p. 1419, June 2017.

Proceedings

R. Zhang and S. Cao, "Support Vector Machines for Classification of Automotive Radar Interference," *2018 IEEE Radar Conference (RadarConf)*, Oklahoma City, OK, USA, April 2018. (in press)

R. Zhang and S. Cao, "Compressed Sensing For Portable Millimeter Wave 3D Imaging Radar," *2017 IEEE Radar Conference (RadarConf)*, Seattle, WA, USA, May 2017, pp. 0663-0668.

R. Zhang and S. Cao, "Portable Millimeter Wave 3D Imaging Radar," *2017 IEEE Radar Conference (RadarConf)*, Seattle, WA, USA, May 2017, pp. 0298-0303.

Dissertation and Thesis

R. Zhang and K. Kieu, "Fiber Based Spectral Domain Optical Coherence Tomography: Mechanism and Clinical Applications," *University of Arizona*, 2015.

R. Zhang and C. Li, "Surface-Enhanced Raman Scattering Substrate Synthesis and Characterization", *Chongqing University*, 2013.

Professional Experience

- Research Assistant at Department of Electrical and Computer Engineering 2015 - Present
Advisor: Dr. Siyang Cao, *University of Arizona*.
 - Radar Interference Detection, Classification and Mitigation
Fields: Radar Interference (RFI), Machine Learning, DSP.
Working on simulation of 77 GHz automotive radar interference. Use machine learning methods to classify different interference range-doppler response results from PRI difference, long chirp, etc.. And use filter design, circular scanning array antenna and advanced signal processing methods to mitigate interference.
 - Automotive Radar Measurement with 3D Printing Lens
With Min Liang and Jin-pil Tak.
Fields: Automotive Radar, DSP, RF and Antenna Theory, Antenna Measurements.
Measurements of real automobile with 77 GHz automotive radar and 3D printing lens (URL: <http://techlaunch.arizona.edu/news/startup-licenses-ua-invented-radar-system>).
 - 3D Imaging Millimeter Wave Circular Synthetic Aperture Radar
Fields: SAR, DSP, Radar Imaging, mmWave Imaging, Compressed Sensing.
Paper published above.
- Sensor Engineer at TuSimple Sept. 2017 - Mar. 2018
TuSimple LLC, Tucson, AZ.
 - Autoliv® 77 GHz multi-mode radar ROS driver development and evaluation.
 - Bosch® 77 GHz long-range radar and mid-range radar ROS driver development.
 - Delphi® 77 GHz electronic scanning radar evaluation.
 - Hokuyo® URG-04LX-UG01 Scanning Laser Rangefinder development and truck trailer monitor/filter project.
 - Industrial radar signal filtering and target recognition development.
- Research Assistant of Nonlinear Optics at College of Optical Sciences 2014 - 2015
Advisor: Dr. Khanh Kieu, *University of Arizona*.
 - Thesis on Fiber Based Spectral Domain Optical Coherence Tomography: Mechanism and Clinical Applications
Fields: Optical Imaging, Interference, Lens Design, Spectral Domain Analysis, Fiber Optics, Medical Imaging, OCT.
- Research Assistant of Applied Optics at College of Optical Sciences 2013 - 2014
Advisor: Dr. Rongguang Liang, *University of Arizona*.
 - Confocal Microscopy
Fields: Optical Imaging, Spatial Pinhole, Lens Design.

Skills

Programming:	Mathworks MATLAB, NI LabVIEW, Eclipse JAVA, Visual Studio C/C++/C#, Python, R, CSS, HTML and Intel FPGA SDK.
RF & EM:	ANSYS EM suite and Keysight ADS.
Sensors:	Radar, LiDAR, CMOS, CCD, sonar, depth sensor, microphone and Microsoft Kinect.
Machine Learning:	SVM, ANN, RNN, k -NN, k -means, naive Bayes, decision tree and mixture model (Gaussian).
CAD & Production:	SOLIDWORKS, Autodesk AutoCAD and Adobe Creative Cloud (Photoshop, Illustrator, Premiere Pro).
Operating Systems:	Windows and Ubuntu.
Embedded Systems:	NI control and acquisition suites and Arduino.
Others:	Digital signal processing (DSP), imaging processing, range-doppler processing, controller area network (CAN) for sensor fusion.

References

Dr. Siyang Cao
Department of Electrical and Computer Engineering
University of Arizona
Email: caos@email.arizona.edu
Phone: 520-621-4521