

Yongyi Zhao

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Education

Rice University Doctor of Philosophy in Electrical and Computer Engineering Adviser: Professor Ashok Veeraraghavan	May 2024 (Expected) Houston, TX
Carnegie Mellon University Bachelor of Science in Electrical and Computer Engineering With University Honors	Aug 2014 – Dec 2017 Pittsburgh, PA

Research Experience

Rice University: Computational Imaging Lab ❖ Adviser: Prof. Ashok Veeraraghavan ❖ Developing techniques for minimally-invasive imaging of neural activity ❖ Developing algorithm to accelerate simulations of photon propagation through biological tissue	Aug 2018 – Present Houston, TX
Carnegie Mellon University: Image Science Lab ❖ Adviser: Prof. Aswin Sankaranarayanan ❖ Researched, developed, and analyzed accuracy of computational camera models ❖ Developed prototype of spherical, lensless imaging device	Jan 2017 – May 2018 Pittsburgh, PA
Northeastern University: Gas Sensing Properties of Functionalized Graphene ❖ Adviser: Prof. Swastik Kar ❖ Researched applications of graphene in vapor detection ❖ Developed gas sensing probes, using graphene, for detection of acetone	Aug 2012 – Jun 2013 Boston, MA

Publications & Presentations

- Ozturk B., [...], **Zhao Y.**, et. al. Atomically Thin Layers of BNCO with Tunable Composition. *Science Advances*. 1 (2015). <http://advances.sciencemag.org/content/1/6/e1500094>
- Zhao Y.**, Nuhfer, T., & Nisha Shukla. "Synthesis and Characterization of Tetrahedral Gold Nanoparticles." Berg Symposium, Carnegie Mellon University. Doherty Hall, Pittsburgh, PA. 21 Sep 2015. Oral Presentation.

Projects

Autonomous Electric Vehicle (Capstone Project, 3-Person Group) ❖ Implemented robot that could navigate obstacle course of boxes using purely image processing ❖ Programmed RasPi interface to collect camera data and perform movements on encoded DC motors	Aug 2017 - Dec 2017
Cartoon Interpolation Animator ❖ Animate 2-D image using interpolation: manipulate using cage, skeleton, spline interpolation ❖ Implemented program in Python, using python image library for speed optimization and user interface	Dec 2016
Racing Simulation using OpenCV Motion Detection ❖ Presented as one of top 15 projects (of ~400 students) for 15-112 Spring 2015 Course ❖ Used OpenCV library to create racing game that could read hand and feet motion of user as controls	April 2015

Awards & Honors

John Clark Jr. Fellowship Award	Aug 2018
❖ Fellowship from Rice University, supporting first-year graduate studies	
Frank J. Marshall Scholar Award	May 2018
❖ Annual award for one graduating CMU ECE undergraduate for academics and research	
Andrew Carnegie Society (ACS) Scholar	Sep 2017
❖ Recognized as one of 40 students from graduating class for academics, involvement and leadership	
Eta Kappa Nu, IEEE Honor Society	Nov 2017
Tau Beta Pi Engineering Honor Society	Nov 2016
CMU Summer Undergraduate Research Fellowship	May 2015
National Merit Scholarship Finalist	May 2014
Siemens Science Competition Semifinalist	Oct 2013
❖ Selected as semifinalist (300 total) for outstanding original research report	

Work Experience

Teaching Assistant (TA), 15-112 at Carnegie Mellon University	Aug 2016 – Dec 2016
❖ Lead recitation of 20 students, weekly lecture to deepen students' understanding	Jan 2018 – May 2018
❖ Perform course logistics: grading, tutoring at office hours, leading review sessions	Pittsburgh, PA
Teaching Assistant (TA), 18-240 at Carnegie Mellon University	Aug 2017 – Dec 2017
❖ Lead lab section of 30 students, weekly project to deepen students' understanding	Pittsburgh, PA
❖ Perform course-support tasks: grading, tutoring at office hours, leading review sessions	
Software Development Engineer Intern at Amazon.com	May 2017 – Aug 2017
❖ Working on Amazon AWS, Elastic Compute Cloud Team	Seattle, WA
❖ Designing and implementing container service	

Skills

Programming/Computing:

- ❖ **Strong:** Python, C
- ❖ **Proficient:** C++, Matlab, Linux
- ❖ **Limited:** Version Control (Git), Qt, SystemVerilog

Volunteer Activities

Mentor, Higher Achievement	Oct 2014 – May 2017
❖ Tutored group of 2-5 middle school students in project design and scientific method	
❖ Created and implemented projects to teach programming and experimental design	
Mentor, PATHS-UP Research Experience for Teachers (RET)	May 2019 – July 2019
❖ Mentored 6 teachers who taught in underrepresented communities of Houston Independent School District	
❖ Designed a curriculum to teach RETs the remote photoplethysmography algorithm	