

**University Address**

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**Yongyi Zhao**

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**Education**

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**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**

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**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**

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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**

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**Autonomous Electric Vehicle** (Capstone Project, 3-Person Group)

**Aug 2017 - Dec 2017**

❖ 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

**Cartoon Interpolation Animator**

**Dec 2016**

❖ 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

**Racing Simulation using OpenCV Motion Detection**

**April 2015**

❖ 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

## Awards & Honors

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

## Work Experience

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

## Skills

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### Programming/Computing:

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

## Volunteer Activities

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