

Yongyi Zhao

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Education

Carnegie Mellon University
Bachelor of Science in Electrical and Computer Engineering
With University Honors
Overall GPA: 3.93/4.00

Aug 2014 – Dec 2017
Pittsburgh, PA

Research Experience

Carnegie Mellon University: Image Science Lab

Jan 2017 – Present
Pittsburgh, PA

- ❖ **Supervisor:** Prof. Aswin Sankaranarayanan
- ❖ Researching, developing, and analyzing accuracy of computational camera models
- ❖ Developing prototype of spherical imaging device

Carnegie Mellon University: Inorganic Nanoparticles for Chiral Separation

Oct 2014 – Dec 2017
Pittsburgh, PA

- ❖ **Supervisor:** Dr. Nisha Shukla
- ❖ Synthesize and characterize gold nanoparticles in chiral sensing/separation
- ❖ Establish procedure for reproducible production of faceted gold nanoparticles

Stony Brook University: Antibacterial Applications of Graphene/Polymer Blend

Jun – Aug 2013
Stony Brook, NY

- ❖ **Supervisor:** Prof. Miriam Rafailovich & Prof. John Jerome
- ❖ Established methodology for synthesizing antibacterial polymer structures
- ❖ Synthesized material that could puncture microbial films

Northeastern University: Gas Sensing Properties of Functionalized Graphene

Aug 2012 – Jun 2013
Boston, MA

- ❖ **Supervisor:** Prof. Swastik Kar
- ❖ Researched applications of graphene in vapor detection
- ❖ Developed gas sensing probes, using graphene, for detection of acetone

Northeastern University: Genetic Regulation of Cell Migration in *C. elegans*

Jun – Aug 2012
Boston, MA

- ❖ **Supervisor:** Prof. Erin Cram
- ❖ Utilized RNAi to study genetic regulation of distal-tip cell migration in *C. elegans*
- ❖ Established relation between specific gene sequences and migration patterns

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)

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

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 Honors 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), 18-240 at Carnegie Mellon University

Aug 2017 – Present

- ❖ Lead lab section of 30 students, weekly project to deepen students' understanding
- ❖ Perform course-support tasks: grading, tutoring at office hours, leading review sessions

Software Development Engineer Intern, Amazon.com

May 2017 – Aug 2017

- ❖ Working on Amazon AWS, Elastic Compute Cloud Team
- ❖ Designing and implementing container service

Seattle, WA

Teaching Assistant (TA), 15-112 at Carnegie Mellon University

Aug 2016 – Dec 2016

- ❖ Lead recitation of 20 students, weekly lecture to deepen students' understanding
- ❖ Perform course logistics: grading, tutoring at office hours, leading review sessions

Pittsburgh, PA

Skills

Programming/Computing:

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

Languages: Fluent in English and Chinese (Mandarin)

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