**Yongyi Zhao­­**

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**Education**

**Rice University May 2024** (Expected)

**Doctor of Philosophy in Electrical and Computer Engineering** **Houston, TX**

**Carnegie Mellon University**  **Aug 2014 – Dec 2017**

**Bachelor of Science in Electrical and Computer Engineering Pittsburgh, PA**

Overall GPA: 3.93/4.00

**Research Experience**

**Carnegie Mellon University: Image Science Lab Jan 2017 – May 2018**

* **Supervisor:** Prof. Aswin Sankaranarayanan **Pittsburgh, PA**
* 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**

* **Supervisor:** Dr. Nisha Shukla **Pittsburgh, PA**
* 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**

* **Supervisor:** Prof. Miriam Rafailovich & Prof. John Jerome **Stony Brook, NY**
* 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**

* **Supervisor:** Prof. Swastik Kar **Boston, MA**
* 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**

* **Supervisor:** Prof. Erin Cram **Boston, MA**
* 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 Tetrahexahedral 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**

**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 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 – 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, Amazon.com May 2017 – Aug 2017**

* Working on Amazon AWS, Elastic Compute Cloud Team **Seattle, WA**
* Designing and implementing container service

**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**

**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