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## Education

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**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

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**Carnegie Mellon University: Image Science Lab**

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

**Jan 2017 – Present**  
**Pittsburgh, PA**

**Carnegie Mellon University: Inorganic Nanoparticles for Chiral Separation**

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

**Oct 2014 – Dec 2017**  
**Pittsburgh, PA**

**Stony Brook University: Antibacterial Applications of Graphene/Polymer Blend**

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

**Jun – Aug 2013**  
**Stony Brook, NY**

**Northeastern University: Gas Sensing Properties of Functionalized Graphene**

- ❖ **Supervisor:** 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**

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

- ❖ **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

**Jun – Aug 2012**  
**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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**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

**April 2015**

- ❖ 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>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 Honors 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), 18-240 at Carnegie Mellon University</b>	<b>Aug 2017 – Present</b>
❖ Lead lab section of 30 students, weekly project to deepen students' understanding	
❖ Perform course-support tasks: grading, tutoring at office hours, leading review sessions	
<b>Software Development Engineer Intern, Amazon.com</b>	<b>May 2017 – Aug 2017</b>
❖ Working on Amazon AWS, Elastic Compute Cloud Team	
❖ Designing and implementing container service	
<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	
❖ Perform course logistics: grading, tutoring at office hours, leading review sessions	

## Skills

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**Programming/Computing:**

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

**Languages:** Fluent in English and Chinese (Mandarin)

## 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	