

# Kim N Luong

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## Education

### M.Sc. in Robotics

UNIVERSITY OF PENNSYLVANIA

2016 - 2018

### B.Sc. in Mechanical Engineering

UNIVERSITY OF SOUTHERN CALIFORNIA

2011 - 2016

## Experience

### mLAB - Real-Time and Embedded Systems Lab, Advisor: Dr. Rahul Mangharam

Philadelphia, PA

RESEARCH ASSOCIATE

2020 - Present

- Lead education and outreach efforts for the F1TENTH project <http://f1tenth.org/>
- Synthesize and package ESE615 course materials so that it can be taught at other universities
- Write and maintain technical documentation for F1TENTH hardware and software
- Designed power management circuit board for F1TENTH vehicle

### InventXYZ,

Philadelphia, PA

COURSE DEVELOPER

Summer 2019

- Created an Arduino lab for high school students to learn algebra and engineering at the same time
- Worked with high school teachers make sure the lab adheres to state standards

### Modular Robotics Lab, Advisor: Dr. Mark Yim

Philadelphia, PA

GRADUATE RESEARCHER

2016 - 2019

- Researched methods to control passively stable flying vehicle
- Designed printed circuit board for Piccolissimo, world's smallest self-powered flying vehicle
- Developed experiments to map steering directions to achieve open loop control of vehicle

### Automatic Coordination of Teams Robotics Lab, Advisor: Dr. Nora Ayanian

Los Angeles, CA

UNDERGRADUATE RESEARCHER

2015-2016

- Developed algorithm in Python to create a light painting using a team of robots

### Army Research Lab West, Advisor: Dr. Ethan Stump

Playa Vista, CA

VISITING RESEARCHER

Summer 2016

- Implemented algorithm in C++ to include prioritized faces in 2D multi-target tracking

### Shock Wave Lab, Advisor: Dr. Veronica Eliasson

Los Angeles, CA

UNDERGRADUATE RESEARCHER

2013-2015

- Designed and performed experiments to study underwater shock focusing in PMMA samples containing a logarithmic cutout

## Teaching

### ESE519: Real-Time Embedded Systems

UPenn, Philadelphia, PA

TEACHING ASSISTANT

Fall 2019

- Held weekly office hours and answered student questions through Piazza, the online Q&A platform (29 students)
- Led weekly labs and recitations to reinforce students' learning of materials
- Graded lab assignments

### Girls in Engineering, Mathematics, & Science (GEMS) Summer Camp

UPenn, Philadelphia, PA

COURSE INSTRUCTOR

Summer 2018, 2019, 2019

- Introduced robotics to middle school girls using LEGO Mindstorms during a one week camp (24 students)

### ESE350: Embedded Systems/Microcontroller Lab

UPenn, Philadelphia, PA

TEACHING ASSISTANT

Spring 2019

- Held weekly office hours and answered student questions through Piazza, the online Q&A platform (41 students)
- Led weekly labs and recitations to reinforce students' learning of materials
- Mentored teams for final projects

### ESE111: Atoms, Bits, Circuits, & Systems

UPenn, Philadelphia, PA

TEACHING ASSISTANT

Fall 2018

- Graded lab assignments and mentored teams for final projects (59 students)

## Mentoring

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<b>Raymond Yang</b> , UPenn Undergraduate Student	Spring 2020
<b>Noah Tatman</b> , UPenn Undergraduate Student	Summer 2019
<b>Jasmine Liu</b> , Math, Science, and Technology Community Charter School High School Student	Summer 2019
<b>Fangzhou Yu</b> , Stonybrook Undergraduate Student	Summer 2019
<b>Benjamin Jacob</b> , UPenn Undergraduate Student	Summer 2018

## Outreach

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<b>Rachleff Scholars Graduate School Q&amp;A</b> <i>Panelist</i>	UPenn, Philadelphia, PA September 12, 2019
<b>ESE Senior Design Demo Day</b> <i>Judge</i>	UPenn, Philadelphia, PA April 17, 2019]
<b>Girls in Engineering and Related Sciences (GEARS) Day</b> <i>Closing Speaker</i>	UPenn, Philadelphia, PA October 13, 2018
<b>USA Science &amp; Engineering Festival</b> <i>Demonstrator</i>	Washington, D.C. April 5-8, 2018
<b>Women in Coding</b> <i>Panelist</i>	USC, Los Angeles, CA July 10, 2015

## Publications

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O'Kelly, M., Zheng, H., Jain, A., Auckley, J., **Luong, K.**, & Mangharam, R. "TUNERCAR: A Superoptimization Toolchain for Autonomous Racing." 2020 International Conference on Robotics and Automation (ICRA).

Gonzales, O. D., **Luong, K.**, Homma, H., & Eliasson, V. (2016). "Experimental investigation of dynamic fracture initiation in PMMA submerged in water." Journal of Dynamic Behavior of Materials, 2(3), 391-398.

## Presentations

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<b>Society of Experimental Mechanics Conference</b> <i>Effects of Solid-Fluid Interaction on Crack Propagation of PMMA</i>	Costa Mesa, CA June 11, 2015
<b>USC Undergraduate Research Symposium</b> <i>Study of Vinyl-Ester Resin Under Dynamic Loading Conditions</i>	Los Angeles, CA April 16, 2014
<b>Ivy Plus Symposium</b> <i>Humidity Level Variation and Soaking of PMMA Under Dynamic Loading</i>	Cambridge, MA March 14, 2014

## Honors & Awards

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2019	<b>ESE Best Doctoral Citizen Award</b>
2015	<b>USC Women in Science &amp; Engineering Research Grant</b>
2013	<b>USC Undergraduate Research Associates Program</b>
2013	<b>USC McNair Summer Research Fellow</b>
2011	<b>Gates Millennium Scholar</b>
2011	<b>Quest Scholar</b>

## Skills

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<b>Software</b>	C, MATLAB, Python, C++, ROS, $\LaTeX$
<b>Electrical</b>	Microcontrollers, PCB Design, Altium, Eagle
<b>Mechanical</b>	Solidworks, CNC Machining, Geometric Dimensioning & Tolerance
<b>Language</b>	English, Vietnamese, Spanish

## Interests

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**Professional:** autonomous vehicles, mechatronics, circuit board design, STEM education

**Personal:** artisan bread making, ashtanga yoga