

# CAMERON E. KISAILUS

Fall 2021

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## EDUCATION

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**University of Michigan - Robotics Institute**  
Ph.D. Robotics

*August 2021 - Present*

**University of Pittsburgh - Swanson School of Engineering**  
B.S. Mechanical Engineering / Minor: Computer Science

*August 2016 - December 2020*

Overall GPA: 3.5/4.0

**Senior Design Project: *Development of a Robotic Work Cell for Handling of Small Parts***

- Trained a YOLOv3 neural network and worked extensively with OpenCV to detect camera lenses.
- Used ROS to program the autonomy stack to implement pick-and-place of lenses in our work cell.
- 3rd place award, Mechanical Engineering. (Fall 2020 Swanson School of Engineering Design Expo)

## RELEVANT COURSES

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**Mechanical Engineering:** Dynamic Systems, Automatic Controls, Mechatronics

**Computer Science:** Data Structures, Algorithm Implementation, Systems Software

**Mathematics:** Calculus III, Matrices & Linear Algebra, Differential Equations

## EXPERIENCE

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**Aurora**

*Software Engineering Intern*

Summer 2020, 2019

*Pittsburgh, PA*

- Produced high-quality simulations and created map content for development of autonomous vehicles. Identified pain points, redundancies, and latencies in the processes and proposed improvements.
- Framed a problem statement and designed a solution to allow simulation creators to iterate more quickly. Decreased iteration cycle time by 90%, from over 1 hour to less than 10 minutes.
- Designed, developed, and implemented new software testing tooling and task automation scripts for use by a large team of production users.

**AirLab — Carnegie Mellon University**

*Robotics Research Assistant*

January 2020 - March 2020

*Pittsburgh, PA*

- Worked on the Mohammed bin Zayed International Robotics Competition under Dr. Sebastian Scherer and Dr. Oliver Kroemer.
- Trained a neural network using Darknet and YOLOv3 to detect and localize balloons and balls.

**Robotics and Automation Society — University of Pittsburgh** January 2018 - August 2020

*Director of Outreach, Perception Team Lead*

*Pittsburgh, PA*

- Served as perception team lead on Intelligent Ground Vehicle Competition and developed objection detection and localization algorithms using camera and lidar.
- Wrote a novel algorithm to detect and produce map content with spray painted conduit lines in an outdoor course.
- Responsible for recruiting and on-boarding new club members.

**Jacobs Lab — University of Pittsburgh**  
*Research Assistant*

Fall 2017 - Spring 2019  
*Pittsburgh, PA*

- Worked under Dr. Tevis Jacobs investigating the mechanics of interfacial contact in emerging nanoscale applications.
- Performed and compared different state-of-the-art surface roughness characterizing techniques including Optical Profilometry and Stylus Profilometry.

**Nissan Technical Center North America**  
*Mechanical Engineering Co-op Student*

Spring 2018, Fall 2018  
*Farmington Hills, MI*

- Developed countermeasures due to customer complaints, designed and ran studies to confirm material selection and failure modes, and gathered data from other groups within the company to confirm suspension specifications.
- Set database standards in order to provide project clarity to upper management, created a program to estimate the time and cost a new change would require, and spearheaded an effort to implement an organization-wide task tracking system.

## **PUBLICATIONS**

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**Characterizing surface finish and fatigue behavior in binder-jet 3D-printed nickel-based superalloy 625.** Mostafaei, A., Neelapu, S.H.V.R., Kisailus, C., Nath, L.M., Jacobs, T.D.B., & Chmielus, M. *ADDITIVE MANUFACTURING* 2018

## **TEACHING AND OUTREACH**

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**Aurora Academy, Pittsburgh, PA (2020)**

Instructor of Python/Software Engineering fundamentals course to non-technical employees at Aurora.

**Goldstein Test Prep, Pittsburgh, PA (2017 - present)**

Private tutor for over a dozen high school students in AP Physics, AP Calculus, and SAT/ACT prep.

**Assemble Pgh, Pittsburgh, PA (2017 - 2018)**

Volunteer instructor at a nonprofit teaching STEM principles to under-privileged/-represented youth.

**Smithsonian Air and Space Museum, Washington, D.C. (2014 - 2015)**

Facilitator of experiments at hands-on stations to teach space concepts to visitors of all ages.

## **AWARDS AND HONORS**

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**The Cathedral of Learning Prestige Scholarship (2016 - 2020)**

Awarded a full tuition, merit-based academic scholarship by the University of Pittsburgh.

**Carnegie Mellon University's Robotics Institute Summer Scholars Program (2020)**

Accepted to the highly competitive 2020 cohort – 35 out of 1800 international applicants accepted.

**Randall Family Big Idea Competition, University of Pittsburgh (2019)**

Semi-finalist in student pitch competition. Developed product concept to seek \$25,000 in funding.

**Innovation Works' Startable Pittsburgh Program (2016)**

2nd place winner in final pitch competition. Developed product from concept to commercialization.

## TECHNICAL SKILLS

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**Computer Languages:** Python, C/C++, Java  
**Software Tools:** Linux, ROS, OpenCV, Darknet (YOLO)