

Kiva McCracken

in kivamccr

🔗 kivamccr.xyz

🎓 Education

B.S. Optics & Photonics, *University of Central Florida*
2026 Grad | Orlando, FL

- Interest/focus in Optical MEMS, metamaterials, and metasurfaces.
- In my fourth year, planning on a Masters in material science.

Precision Machining, *Suncoast Technical College*
2021 | Sarasota, FL

CAM, Hand Mill/Lathes, Haas CNC Mill/Lathes, & Welding.
+ Robotic Automation of Hass Mills.

🏢 Experience & Organizations

Research Assistant, *Dr. Jaesung Lee*
2024 - present | Orlando, FL

- Head of CAD & manufacturing for lab projects: custom vacuum chamber, optical kinematic systems, mounting for microscopy, etc...
- Demonstrated cleanroom procedures & machines: spin coaters, direct write lasers (DWL) wet etching, cleaning of wafers, & principles of gowning.
- Designed semiconductor manufacturing protocol for Silicon Nitride membranes.

Camp Director, *University of Central Florida*
2024 - present | Orlando, FL

- Teaching optical principles at a high school level with an emphasis on hands-on experience.
- Designed custom projects for students to learn concepts at a reduced cost, such as a camera lucida or \$10 newtonian telescope project.

Contractor, *Roots Engineering Services*
2021 - 2024 | Mixed Mode

- Designed, manufactured, and assembled robotic systems.
- Developed curriculum materials to bridge the professional to student gap.
- Created marketing and pre-vis material for robotic systems to aid in design and sales. ex. 1.3 million dollar semiconductor manufacturing simulator.

Certified Technician, *Valvoline*
2023 - 2024 | Oviedo, FL

- Managed customer sentiment and presented services and discounts to encourage sales.
- Performed services: oil changes, transmission, differential, fuel system, etc...
- Consistently achieved or surpassed sales goals.

Drone Pilot, *University of Miami*
2019 | Peru

Drone survey & videography of Rio Chillon for torrent duck and habitat research.

Lifetime Member, *Suncoast Science Center*
2016 - 2021 | Sarasota, FL

- Recieved Lifetime Membership award upon leaving the program.
- Senior Committee member leading fellow team members in the design, build, and management of the annual RC Car Race.
- Taught workshops and classes to contestants and volunteers alike on STEM skills and using lab machinery.

🏆 Notable Certificates

- SolidWorks CSWP Professional
- NIMS CNC Mill Operations

📖 Publications

[1] McCracken, K. G., Alza, L. A., McCracken, K. G., and Smith, M. M. (2012). Parasitism and joint incubation of upland goose (*chloephaga picta*) nest by yellow-billed pintail (*anas georgica*). *Ornitología Neotropical*, 23(2):287-290.

📁 Professional Projects

Semiconductor Manufacturing Training System 2021 - 2023
Rendering, CAD, and design work for a collegiate level robotic training system in simulated semiconductor manufacturing.

Medallion Factory Training System 2021 - 2023
Rendering, CAD, and design work for a collegiate level robotic factory training system.

UCF Great Naval Orange Race 2022
A GPS navigation based boat design, and an accompanying publication style research paper for the UCF annual Great Naval Orange Race.

MicroTorr Vacuum Chamber 2024
Custom chamber designed for CNC machining, with support for microscope & electrical feedthroughs.

Automated Lens Parameter System 2025 - present
Developing budget high power Xenon source, imaging system, & codebase to generate lens datasheet ex situ.

For a full list of projects check out my website!