

Kiva McCracken

📍 Orlando, Florida, USA [in](#) kivamccr [🔗](#) kivamccr.xyz

🎓 Education

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

- Constructed laser aligned optoelectronic systems using industry standard optomechanics, gaining industry applicable experience.
- Learned software skills such as MATLAB & Python to improve data processing accuracy. For example: Extracting wavelength from video of Michaelson interferometer translation.
- Taught CAD, rendering, and LaTeX in weekly workshops, filling in critical curriculum gaps at CREOL.

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

- Completed the Titans of CNC curriculum using Fusion 360 CAD/CAM software to learn operation of the Haas VF-2 CNC mill.
- Performed inspections using calipers, micrometers, & optical comparators to verify that milled parts met the $\pm 0.002''$ tolerance, gaining a understanding of tolerance callouts & concepts.
- Applied feed & speed principles on manual mills and lathes for various metals, successfully producing parts that met drawing specifications.

Advanced Manufacturing, *Suncoast Technical College*
2020 | Sarasota, FL

- Certified in SolidWorks & trained in FDM/SLA 3D printing, creating complex lattices and functional 3D-printed parts.
- Operated a Trotec laser cutter, using CorelDraw to design & fabricate complex 2D-to-3D slotted parts.
- Fabricated a welded sculpture using a plasma cutter & MIG welder, earning second place at SkillsUSA Sarasota.

🛠️ Experience & Organizations

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

- Designed vacuum chambers & custom optomechanics using CAD & 3D printing, enabling fast project lifecycles and decreasing costs.
- Optimized Silicon nitride membrane fabrication protocol using wet etching & direct write lithography, culminating in cleanroom experience & device redesign.
- Created & led an emergency team to recover diamagnetic composite production after a scheduling breakdown during a \$1.2M grant deadline, enabling renewal and continued funding.

Photonics Camp Director, *University of Central Florida*
2024 - 2026 | Orlando, FL

- Taught optics & photonics principles to over 100 students using custom hands-on projects, increasing engagement.
- Increased photonics curriculum presence by creating custom PCBs, lowering cost of projects and increasing hands-on component.
- Managed communication via automated systems such as Qualtrix to save time & reduce errors, increasing parent satisfaction.

Contractor, *Roots Engineering Services*
2021 - 2024 | Hybrid

- Designed piping & instrumentation diagrams (P&IDs) to construct electro-pneumatic systems using industry distributors. Creating an educational framework for robotic material handling & processing.
- Created marketing & pre-vis materials for robotic systems using Blender & Davinci Resolve, aiding in the sale of a \$1.3M semiconductor manufacturing simulator.
- Automated workflows by programming UR-series cobots, validating educational systems, and supporting curriculum design.

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

- Taught hundreds of volunteers & users advanced manufacturing tools in hands on workshops & classes, standardizing lab training & improving volunteer teams capability.
- Managed sub-team as part of RC Car event senior committee, using roadmaps, breakout groups, & regular check-ins to accomplish all major builds ahead of schedule.
- Accrued 500+ hours of volunteer time, over the course of 5 years through lab projects/improvements, culminating in a Lifetime Membership Award as an alumni.

🏆 Notable Certificates

- SolidWorks CSWP Professional
- NIMS CNC Mill Operations

For a full list of projects check out my website!