Michael Gross

mgrossofficial@gmail.com | (520) 419-9061 | Gilbert, AZ | linkedin.com/in/mhgross | github.com/MGross21

RESEARCH INTERESTS

- Autonomous Exploration Systems
- Sensor Fusion and Localization
- Reconfigurable and Multi-Robotic Systems
- Physics Simulation
- Control Systems Design and Optimization
- Dynamic Motion Planning

EDUCATION

Arizona State University, Mesa, AZ
M.S. in Robotics and Autonomous Systems — Aug 2024 – Present
4+1 Accelerated Program; Thesis Advisor: Dr. Binil Starly
B.S.E. in Robotics Engineering, Minor in Applied Mathematics — Aug 2020 – May 2024
Summa Cum Laude

RESEARCH EXPERIENCE

Robotic Agnostic Digital Twin with Camera-Based Validation — Aug 2024 – Present
Robotic arm sim, CV, path planning, pose correction
Sponsor: Los Alamos National Laboratory
Advisor: Dr. Binil Starly

Image Edge Mapping for Object Recognition — Aug – Dec 2022
Image datasets, CNN training, accuracy benchmarking
Advisor: Dr. Michelle Zandieh

PROFESSIONAL EXPERIENCE

R&D Intern, Precision Planting (AGCO), Fargo, ND — May – Aug 2024
Embedded systems, field testing, data collection and analysis

Head Counselor, Camp IHC — Summers 2018 – 2023
Logistics coordination, training facilitation, mentorship

PROJECTS

MuJoCo Toolbox (GitHub) — Aug 2024 – Present
Published Python package for simulation wrapping and automation

Turtlebot4 Predator-Prey Model — Jan 2025 – Present
ROS2 development, SLAM, CV, sensor fusion, algorithm design

Foldable Robotics Gait Reproduction — Aug – Dec 2024
MuJoCo simulations, limb-motion studies, material modeling

Tilt-Up Window Automation — Aug 2023 – May 2024
Voice recognition, embedded design, capstone with Summit Automation

Weather Sensing Umbrella — Jan – May 2023
2DOF control system, smart sensors, PCB design

Fleet Science Museum SCRAM Robot — Aug – Dec 2022
Interactive education exhibit using SCRAM mechanisms

Reverse-Engineered Regenerative Braking — Jan – May 2022
Motorized mass system, microcontroller logic, sensory feedback

Parking Sensor Retrofitting — Aug – Dec 2021
Optical sensors for individual spot detection and signage

Automated Boom Arm Sprayer — Jan – May 2021
Ultrasonic ground detection, FSM logic, motor actuation

LEADERSHIP AND ACTIVITIES

FTC Mentor, Catalina Foothills HS — Aug 2022 – Present
Sensor fusion, localization, multi-threaded control

Design & Manufacturing Challenge (MR+A) — Oct 2024 – Present
Digital manufacturing innovation competition

FLL Mentor/Volunteer — Aug 2015 – Present
STEM mentorship, event volunteering

ASU Esports: Team Manager, Social Media Lead — Aug 2020 – Present

Principled Innovation Academy Feb – May 2024
Equity-based problem solving
Machine Learning Club Jan – Dec 2022

HONORS AND AWARDS

Accelerated Master's Award AY 2024 – 25
Fulton Graduate Scholarship AY 2024 – 25
Dean's List, ASU Ira A. Fulton School of Engineering Fall 2020 – Spring 2024

CERTIFICATIONS

UR Cobot eSeries (2023): Core Track, Pro Track
MATLAB (2022): Control Design, DL, ML, Simscape, Stateflow, Image/Signal Processing
American Red Cross (2018 – 2022): Lifeguarding, CPR, AED

SKILLS

Programming: Python, C, C++, MATLAB, Simulink, Arduino, Java
Engineering Software: ROS2, MuJoCo, Gazebo, Linux, KiCad, Cadence, Inventor, Creo, SolidWorks
Robotics Hardware: UR Cobot, myCobot
Fabrication: 3D Printing, Laser Cutting, Power Tools

MEDIA

AZFLL State Competition Coverage, 2014
ASU Dream Competition Winner, 2025