Maxime Zand

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EDUCATION

Master of Science in Robotics and Autonomous Systems **Expected May 2025**
Arizona State University (ASU) **Tempe, AZ**

- GPA : 4.0 / 4.0
- Relevant course work: Modeling and Control of Robots, Perception in Robotics, Linear Algebra in Engineering

Bachelor of Science in Mechanical Engineering **December 2023**
Arizona State University (ASU) **Tempe, AZ**

- Relevant course work: Applied Machine Learning, System Dynamics and Controls (I&II), Circuits, Advanced Numerical Methods, Mechanical Engineering Design, Statistics, Finite Element Methods

EXPERIENCE

Graduate Research Aide **January 2024 - Present**
Battery Electric & Intelligent Vehicle Lab, ASU **Tempe, AZ**

- Designing a physical simulation platform to evaluate human interaction and intervention in autonomous driving algorithms aiding in 2 research projects.
- Utilizing Linux and Windows platforms to engineer a physical simulator operating 4 devices including a motion platform to replicate the accelerations and operational dynamics of autonomous vehicles within a virtual environment.
- Spearhead Python application development, integrating Carla simulator and Autoware driving with physical setup.

Research Aide **May 2023 - January 2024**
Advanced Manufacturing and Functional Devices Lab, ASU **Mesa, AZ**

- Collaborated with graduate researchers on development of projection micro-stereolithography 3-D printers.
- Converted existing control system software to Python for quick development cycles. (C++, Python, Control Systems).
- Leveraged PyQT and Python to re-conceptualize existing user interface and to render bitmap components of print into UV patterns on Digital Micromirror Device (DMD).

Research Aide **August 2023 - December 2023**
Center for Bio-mediated and Bio-inspired Geotechnics, ASU **Tempe, AZ**

- Brainstormed new designs for development of bio-inspired self-burrowing robots using SolidWorks.
- Shadowed senior researchers with mechanical design in SolidWorks and programming along with literature reviews.

PROJECT EXPERIENCE

Robotics Control Simulation **January 2024 - May 2024**
Arizona State University **Tempe, AZ**

- Directed a team of 5 to create a MATLAB App for simulating manipulator dynamics and control responses, using App Designer for seamless user interaction.
- Implemented impedance and compliance control, deriving symbolic equations of motion, and GUI for manipulator analysis.

CubeSat Deployable Components **January 2023 - December 2023**
Arizona State University **Tempe, AZ**

- Collaborated on design and manufacture of cheaper, re-deployable, and easily testable components for a 3U CubeSat satellite in a team of seven students.

Conduit App **July 2022 - December 2022**
Personal Project **Phoenix, AZ**

- Designed and developed software to allow Bluetooth codecs on Windows operating systems to interface with Apple devices leveraging the Apple Notification Center Service using 3 GATT characteristics.

SKILLS

Programming/Frameworks: Python, MATLAB, C/C++, C#, OpenCV, TensorFlow/Keras, PyTorch, PyQT
Tools/Environments: Raspberry Pi, Arduino, Robot Operating System (ROS), Git/GitHub, Linux/Ubuntu, Visual Studio
Design and Modeling: MATLAB/Simulink, Computer Vision, SLAM, SolidWorks, ANSYS (+ Fluent), Microsoft Office
Certification: Entrepreneurially Minded Micro-Credential (EM2C)

PROFESSIONAL & CAMPUS INVOLVEMENT

American Society of Mechanical Engineers ASU Chapter, *Industry Liaison* **December 2021 - August 2022**

- Organized industry events with companies, such as Microsoft, during the 2021 academic year.