8521 Saint Louis Ave - Skokie, IL 60076 **Michael Wiznitzer** (847) 420-4225
Portfolio: mechwiz.github.io/Portfolio/ michaelwiznitzer2018@u.northwestern.edu

Objective

A summer internship in the **robotics** field. Specific interests include autonomous navigation, robotic manipulation, and controls.

Skills

Software Development: Python, C, Matlab/Simulink, Arduino, Java, Lua, Git/GitHub, Linux
General: Microsoft Office (Word, Excel, Project, PowerPoint, Outlook, Visio)
Robotics: ROS, OpenCV, RViz, Gazebo, V-Rep
CAD: Solidworks, ANSYS (FEA)

Education

Northwestern University (2017 - 2018) **GPA: 3.58/4.00**
Major: M.S. in Robotics || Expected Graduation: December 2018
Areas of Focus: Autonomy, Plath Planning, Computer Vision, Embedded Systems, Mechatronics, AI, Robotic Manipulation, Controls

Milwaukee School of Engineering (2013 - 2017) **GPA: 3.76/4.00**
Major: B.S. in Mechanical Engineering || Minor: Mathematics

- Tau Beta Pi Engineering Honor Society member
- Featured in the 2016 edition of *Who's Who Among Students in American Universities & Colleges*
- Student Member of AIAA (American Institute of Aeronautics and Astronautics)
- Rocket design team participant
- Co-Founder and Vice President of JAM (Jewish Association of MSOE)
- Dean's List with high honors for all 4 years
- Received merit, diversity, and presidential achievement scholarships

Experience

Yaskawa America · Buffalo Grove, IL - *Engineering Intern* June 2017 – August 2017

- Repaired semiconductor robots in a cleanroom environment and performed repeatability tests
- Developed spindle test frames and a path-test fixture for assessment purposes, using machining and Solidworks design

Yaskawa America · Santa Clara, CA - *Engineering Intern* June 2016 – August 2016

- Debugged high-priority firmware issues using Lua
- Updated the API library, Web User Interface, and Quick-Start guides for motion controllers

Wisconsin Space Grant Consortium (WSGC) · Milwaukee, WI - *Elijah High Altitude Balloon Payload Intern* May 2014 – August 2014

- Designed and launched a NASA-funded balloon payload and analyzed the data received, using electrical circuits and Arduinos; presented the results at the WSGC conference along with 5 team members

Projects

Visit my portfolio for a more detailed list of relevant projects - mechwiz.github.io/Portfolio/

Robotics September 2017 – December 2017

- **Robotic Maze Navigation** – developed path planning algorithm for a robot to navigate a ball through a maze; used ROS and Python
- **Plinko Game** – simulated a prism navigating a game board; used Lagrangian dynamics, impact laws, constrained forces, and Mathematica
- **Computer Vision** – created a "finger sniper" game that involves histogram-based skin color segmentation, gesture detection, and morphological operations; used OpenCV, Pygame, and Python
- **Robotic Manipulation** – modeled a mecanum-wheeled-robot's end-effector to move to a specified location; used rigid body transformations, forward and inverse kinematics, controls, odometry, Python, and V-Rep

Aquaponics Energy Systems Design for Natural Green Farms September 2016 – May 2017

- Designed an aquaponics facility's multi-room airflow system and considered various renewables to boost energy efficiency; created a Simulink model to project cost, energy usage, and annual CO_2 emissions

Linear Motion Actuator with Feedback Control December 2016 – February 2017

- Implemented state variable feedback control for a motor-driven linearly actuated belt, pulley, and cart system for various step and ramp inputs, loading conditions, and 2% settling-time constraints; used Matlab and Simulink

FEA Analysis of Tie-Down Bracket October 2016 – November 2016

- Designed and analyzed a cargo tie-down bracket to meet certain constraints while minimizing weight and cost; used Solidworks and FEA

Milwaukee Sustainability Project September 2016 – November 2016

- Co-managed a 20-student class-project that developed a technological energy system solution for parts of Milwaukee based on input from the Office of Sustainability and other stakeholders; project incorporated ideas such as food growing, solar energy, composting, stormwater collection, and heating/cooling

NASA's Space Grant Midwest High-Power Rocket Competition October 2015 – May 2016

- Modeled and launched a rocket with a deployable air-brake system; team placed 4th out of 18

Drone Quadcopter June 2015 – August 2015

- Assembled and configured a quadcopter complete with remote-control and a live video feed

Toy Design – The Amazing Maze March 2015 – May 2015

- Designed, CAD modeled, and built a toy based on input from children with Autism Spectrum Disorder and their teachers; addressed motor skills, creativity, problem solving, and sensory needs