

Miles DeWaele

Purdue University
Aeronautical and Astronautical Engineering
Computer Science

315 E. Walnut St.
Roselle, IL 60172
mildewaele@gmail.com
630.725.8648
<https://mdewaele25.github.io/>

Education

Purdue University

Graduated: May 2021

GPA: 3.26

- Bachelor of Science in Aeronautical and Astronautical Engineering
- Minor in Computer Science
- Concentration in Dynamics and Control
- Semester Honors (Fall 2019 – Fall 2020)

Experience

Software Engineering Intern

June – August 2020

Kranze Technology Solutions

- Performed penetration testing on KTS's main product line to discover vulnerabilities and exploits
- Programmed multiple scripts in the fields of ports/enumeration, web servers, and general password concatenation/manipulation (Bash, Java, and Python respectively)
- Integration of all software into Git using Jira and Bitbucket for collaboration with other software developers
- Collaborated with development operations and software/systems engineers to integrate attack vectors
- Compiled all vulnerabilities and findings in a cumulative report along with network security recommendations and presented all results to Kranze executives

Manufacturing Engineering Intern

May – June 2020

Robert C. Weisheit Company

- Optimized 1000+ aerospace parts for manufacturing utilizing industrial machinery
- Implemented algorithm integration to manufacture custom parts using custom machine code
- Assured quality to specifications using a CMM and various measurement instruments

Civil Engineering Intern

May – August 2018

Roselle Public Works

- Supported Roselle's engineering team and assisted in multiple city projects as a young engineer
- Leadership for large-scale projects that were successfully implemented into Roselle's infrastructure
- Integrated GIS software to create project-specific maps that were institutionalized into the organization's operations
- Developed weighted decision matrices for several financial decisions that led to the correct solution

Leadership/Projects

Project Manager of Purdue University Rube Goldberg Team

August 2017 – May 2021

- Leader of a 20+ engineer team to construct a 100 step Rube Goldberg machine from scratch
- Utilized CAD to model the entire machine in the design phase
- Established a culture of productive problem solving and efficient collaboration for decision making
- Coordinated with a leadership team to build a year-long timeline for project completion
- Led the team to achieve 1st place at national competition every year (2018 – 2021)

Signals of Opportunity Soil Moisture Analysis – Senior Design

August – December 2020

- Leader of Mission Operations and Orbital Systems
- Calculated optimal orbits using NASA's GMAT and simulated results using a custom MATLAB script
- Analyzed simulation results versus cost efficiency to decide the best orbit structure
- Planned contingencies for mission end – orbit decay into atmospheric reentry and burnup

Radio Frequency Analysis via Aquatic Craft

May – August 2019

- Programmed Arduino UNOs for complete remote control of a custom built boat
- Constructed a fully operational small-scale boat from scratch that achieved 5+ mph with 50+ foot range

Experimental Rocket XR-1

February – November 2019

- Formulated and tested various compositions of a homemade rocket fuel for optimal thrust generation
- Engineered a rocket body using 3D printed pieces and 3 grains of fuel
- Launched the rocket and measured various properties of the event
- Compiled all findings, measurements, and analysis in an 11 page technical report

Boiler Student Network Mentor

August 2019 – May 2020

- Mentored a first-year aerospace engineer in all facets of university life
- Provided insight and advice for achieving goals and finding success as an engineer

Proficiencies

Technical Skills

- Software: Windows, Linux, Ubuntu, Microsoft Office, Google Suite, C, C++, Bash, Java, Python, MATLAB, GMAT, Autodesk, CATIA, XFLR
- Academia: Control systems analysis, signal analysis, flight dynamics and control, multi-agent autonomy, orbit mechanics, aerodynamics, propulsion, fluid mechanics and thermodynamics, structure analysis, object oriented programming, general math/physics
- Soft skills: Leadership, project management, critical thinking, innovation, collaboration, problem solving, communication, adaptability, presentation skills

Professional Membership

- American Institute of Aeronautics and Astronautics 2018 – Present
- Purdue Society of Professional Engineers 2017 – Present