Miles DeWaele

The Boeing Company
Purdue University

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Education

Purdue University Graduated: May 2021

- Bachelor of Science in Aeronautical and Astronautical Engineering GPA: 3.26
- Minor in Computer Science
- Concentration in Dynamics and Control
- Semester Honors (Fall 2019 – Fall 2020)

Experience

Aircraft Integration Engineer August 2021 – Present

The Boeing Company

- Supported integration of Cruise Missiles onto aircraft and canister launch platforms
- Designed over 40 complex electrical systems in AutoCAD Electrical that passed inspection and performed successfully in a live test environment
- Performed over 30 reviews of other electrical system designs to validate functionality and safety
- Programmed over 10 algorithms in Python to optimize and enhance robustness of less efficient procedures
- Collaborated with engineers from every technical department to write detailed Test Plans and Procedures
- Defined requirements for new business test equipment as well as applicable verification methods
- Presented technical documents at Design Reviews and other large-scale conferences
- Adopted leadership responsibilities regarding design, procurement, and fabrication of missile equipment
- Led ESIL test events to validate operational functionality of both Cruise Missile hardware/software and Aircraft hardware/software
- Solved complex reverse-engineering problems to modernize legacy software and hardware for future use
- Promoted digital engineering to drive first-time quality and robustness in all facets of work scope
- Operated successfully in a remote and hybrid schedule

Software Engineering Intern June – August 2020

Kranze Technology Solutions

- Performed penetration testing on Department of Defense and Air Force Research Laboratory communication software onboard MV-22 aircraft systems
- Programmed multiple scripts to automate port scanning, webserver package upload, and relevant password concatenation (Bash, Java, and Python respectively)
- Integrated 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