DOMINICK C. BRAICO

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EDUCATION

University of Illinois at Urbana-Champaign Expected Graduation: May 2026
Bachelor of Science in Mechanical Engineering GPA: 3.89/4.00
Minor in Computer Science

TECHNICAL SKILLS

CAD: Fusion360, SolidWorks, GD&T
Programming/Electronics: Java, Python, MATLAB, Simulink, ROS 2, Arduino, Raspberry Pi
Tools: CNC Machining, 3D Printing, Soldering, Basic Shop Tools
Spoken Languages: English and German (Conversational)

EXTRACURRICULAR ACTIVITIES

Illinois Robotics in Space (IRIS) | *Excavation Project Lead* August 2023 – Present

- Leading the development and operation of a lunar mining robot as an integral part of a multidisciplinary team for NASA's annual Lunabotics competition.
- Collaborating closely with team members to choose suitable materials, creating custom components using SolidWorks, and optimizing the chassis for weight reduction while ensuring durability.
- Overseeing the design and production of the excavation system for the mining robot.
- Documenting design decisions and researching innovative ideas to guide the future development of the robot.

Tau Beta Pi Engineering Honors Society | *Social Committee* January 2023 – Present

- Organize, plan, and lead social events for initiates and returning members.
- Developed a team goal for the year through collaboration with executive board.

WORK EXPERIENCE

Innovative Data Consulting Inc. | *Intern* May 2023 – August 2023

- Developed Python scripts to optimize data extraction and visualization, seamlessly integrated with Syncromsp API. Extracted information encompassing network engineer billable hours and internal services for enhanced efficiency.
- Engineered a dynamic real-time dashboard within Power BI to optimize resource allocation for network engineers.
- Engaged in effective communication with network engineers to validate and fine-tune data models.

PROJECTS

Industrial Robotic Arm November 2023 - Present

- Designed and integrated Simulink models with ROS 2 for robotic arm control, while establishing efficient communication channels between control algorithms and digital hardware.
- Developed Simulink models for trajectory planning, kinematics, and dynamic control with PID and adaptive algorithms.
- Utilized ROS 2 simulation tools to assess real-time system responsiveness and reliability.

Mechanical Design Project August 2022 – December 2022

- Developed a retractable skateboard lock prototype in Autodesk Fusion360 and developed detailed, ASME Y14 standard engineering drawings for all 21 custom components.
- Utilized aPriori cost analysis software to identify major expenses within our team's design, and subsequently addressed the issues through a redesign process reducing manufacturing cost by 14%.