DOMINICK C. BRAICO

815-274-2630 | dominickbraico32@gmail.com | Linkedin: https://www.linkedin.com/in/dominick-braico/

EDUCATION

University of Illinois at Urbana-Champaign Expected Graduation: May 2026
Bachelor of Science in Mechanical Engineering GPA: 3.90/4.00
Minor in Computer Science

PROFESSIONAL EXPERIENCE

Robotics Intern: May 2024 - Present
US Army Corps of Engineers - Robotics for Engineer Operations

- Designed and fabricated dynamic mechanical support structures for J8 robotic platforms, enhancing the stability and performance of semi-autonomous mobile robotic systems.
- Developed complex 3D mechanical models and detailed manufacturing drawings using SolidWorks for robotic components, reducing design cycle time through advanced modeling techniques.
- Engineered a modular electronics controls box, integrating motor battery systems, sensors, and a central computer, improving control and data visualization capabilities for parallel robotic systems.

Data Analytics Intern: May 2023 - August 2023
InData Consulting Inc.

- Led API integration using SyncroMSP for data extraction, improving network engineer resource allocation by 10% through efficient visualization in Power BI.
- Automated data parsing with custom Python scripts, streamlining JSON processing, reducing data processing time.

EXTRACURRICULAR & LEADERSHIP

Controls System Lead: March 2024 - Present
Ghost Electric Motorcycle Club

- Prototyped and designed custom mounting solutions for permanent magnet motors using Fusion 360, improving the integration of electrical and drivetrain subsystems for an electric motorcycle.
- Led the design and implementation of motor control systems, integrating custom software and controls solutions to electric motorcycle.
- Coordinated the integration of the motorcycle's powertrain with electrical and mechanical subsystems, including battery management, motor controllers, and drivetrain components.
- Conducted performance testing and data collection of motor performance under load, utilizing data feedback to refine system efficiency and enhance vehicle responsiveness.

PROJECTS

Industrial Robotic Arm June 2024 – Present
Personal Project

- Optimized robotic SolidWorks assembly for URDF format exportation, ensuring compatibility with Gazebo simulation for real-time trajectory planning and collision detection.
- Developed control system models in Simulink for real-time robotic joint control, enhancing system response accuracy and reducing error in dynamic simulations

TECHNICAL SKILLS

Mechanical Design: SolidWorks (Certified SolidWorks Associate), Fusion 360, Design for Manufacturability
Software & Electronics: ROS, C++, Python, Linux, Git/GitHub, Raspberry Pi, Breadboard Prototyping
Fabrication Tools: CNC 3-Axis Mill, 3D Printing, Soldering, Waterjet, Laser Cutter, Shop Tools