Ben Goldberg

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Inventor – Maker – Lead Student Researcher

EDUCATION

Kennesaw State University (KSU) Marietta, GA
Bachelor of Science in Mechatronics Engineering May 2027

CERTIFICATIONS

OSHA – 10HR General Industry Certification
MSHA – 30HR Mine Safety Certification

TECHNICAL SKILLS

- **Programming Languages**: C++, Python, SIEMENS PCS7 Controls Suite
- **Operating Systems**: Windows 10/11, Linux, MacOS,
- **Software**: Office suite, Visual Studio/VS Code, MATLAB, Gitlab, GitHub, ANSYS
- **Manufacturing: 5 Years** experience in metalworking, welding, machining, fabrication, and machine assembly.
- **Additive manufacturing: 4 years** of experience in industrial and commercial 3d printing, Stratasys and hobbyist machine repair
- **CAD/CAM: 3 years** of Autodesk Inventor, HSMworks, AutoCAD, Recap, SolidWorks, and Fusion 360

RELATED EXPERIENCE

Automation Instrumentation Intern Atlanta, GA
Thyssenkrupp Polysius/TKIS Polysius December 2022– Present

- **Design** and publish electrical flowsheets, diagrams, control cabinet plotting, IO distribution, and wiring schematics for multi-million-dollar cement manufacturing facilities nationwide.
- **Versed** in PSC7 workspace, developing schematics and ladder logic programming for PLC units from Siemens.
- **Continually improving client-supplier relations, hitting deadlines ahead of time, every time.**

Aerospace Manufacturing/Process Engineer Intern Ball Ground, GA
Universal Alloy Corporation June 2022 – December 2022

- **Assigned** problems/goals, tasked with coming up with solutions to said problems. I have done everything from machining parts for drawer assemblies to designing frictionless, heat-resistant resting plates for light duty aluminum extrusion presses.
- **Designed robust** solutions for lean manufacturing, streamlining the aluminum extrusion process and optimizing billet cut process.
- **Specialized in fabrication** of low-cost, same day solutions to factory downtime and optimization of production lines with 5S factory infrastructure.

Machinist Internship Cypress, TX
HC Machining services June 2020– August 2020

- **Facilitated** repairs on CNC routers, Gained Certification on manual machining working on engine lathes and milling machines. **Rebuilt** old milling machines and lathes, reverse engineering parts for remanufacture.

PROJECT EXPERIENCE

- **First Year Scholars-** Mechanical lead on the design and fabrication of a low-cost solar panel fracture analysis machine, using back current to detect fractures in solar cells. Developed a powered linear XYZ motion system using industry standard motion components.

- **SPCEET Undergraduate Research- Lead Researcher** of a project developing low-cost high efficiency axial flux motors with DFM constraints, invented and tested custom winding configurations for brushless DC motors. Developed and tested a high-efficiency axial flux brushless motor with hybrid material stator and designed industrial motor testing platform. Reverse engineered a proprietary dynamic torque transducer's data communication protocol and wrote a program do interpret this data.

- **KSU Electric Vehicle Team –** Designed and executed the fabrication and wiring of a full body power distribution panel for our autonomous electric go kart, optimizing wiring harnesses for CAN BUS data transmission and PoE distribution to Ubiquiti network devices. Worked on a variety of embedded systems projects including microcontrollers, custom MCU development, serial data communication, brushless motor control, and various mechatronics systems. Used desktop CNC mill, welder, and manual lathe to machine and fabricate various components for steering systems, motor shaft flanges, motor mount brackets, and lead our mechanical team in further fabrication and assembly.

- **Personal Electric Vehicles –** Designed and built multiple PEVs including Skateboards, e-bikes, and e-scooters from the ground up.

- **Reverse Engineering –** Active development in reverse engineering data communications in low-cost brushless motor controllers for use in industrial and consumer applications using logic analysis.

- **Renewable Energy Vehicle Project –** Worked alongside other engineering students to build an endurance based solar-powered electric car competing in the American Solar Challenge

LEADERSHIP EXPERIENCE

- **Leadership Skills:** NYLT, Vice President of Electric Vehicle Team, Lead Researcher on multiple undergrad research projects

HONORS & INVOLVEMENT

- EV Grand Prix 1st place (August 2022- May 2022); 3rd place (May 2023), Kennesaw State University Electric Vehicle Team
- Research achievements – 10,000 dollars funded for research projects, with future oral presentations at IEEE southeast symposium and the IMECE symposium.