Bradley W. Merrill

Mechanical Engineer | Full Stack Developer
bwmengineer428@gmail.com | 845.332.9684

Summary

Results-driven engineer with over 10 years of experience in mechanical design, product development, and software engineering. Proficient in full-stack web development, coding, and building custom hardware solutions. Deep understanding of computer systems, blockchain technology, and emerging technologies, including automation, robotics, and machine learning. Proven ability to translate customer needs into innovative, high-quality solutions. Adept at cross-functional collaboration, problem-solving, and compliance with international standards. Passionate about continuous learning and driving technological advancements.

Professional Experience

Nuvera Fuel Cells 2023 – 2024
Electromechanical Design Engineer *Billerica, MA*

- Led compliance research and testing for high-voltage fuel cell systems, identifying safety risks and improving insulation resistance under humid conditions
- Developed work instructions, process maps, and high-voltage testing methodologies to ensure ISO and industry standard compliance
- Collaborated with engineering and production teams to optimize assembly processes, reducing production errors
- Conducted IQ/OQ/PQ protocols for new equipment, facilitating process validation and compliance

Aved Electronics 2022 – 2023
Electromechanical Engineer *Billerica, MA*

- Designed and implemented automation and vision inspection systems, increasing efficiency and saving over $100K annually
- Created custom mechanical jigs and fixtures to reduce assembly time and improve production workflows
- Programmed Keyence AI-powered vision inspection systems to detect laser weld defects, reducing scrap rates to 0%
- Collaborated on Six Sigma initiatives, identifying process inefficiencies and implementing corrective actions

Desktop Metal 2021 – 2022
Contract Engineer *Burlington, MA*

- Enhanced additive manufacturing processes, reducing development time and costs for prototypes
- Optimized workflows for 3D printing production, driving efficiency gains in manufacturing

ASM NEXX 2019 – 2020
Mechanical Engineer III *Billerica, MA*

- Managed additive manufacturing lab operations, achieving cost reductions on complex part geometries

- Designed and scaled 3D-printed components, including semiconductor parts and air knives, for high-performance systems

Amphenol TCS 2013 – 2018
Product Engineer *Nashua, NH*

- Spearheaded development of high-speed differential pair connector platforms, including Xcede and X2, from concept to high-volume production
- Designed injection molds, pneumatic presses, and stamping dies, improving production efficiency and scalability
- Conducted extensive qualification testing and compliance checks for new products
- Collaborated with international teams to optimize manufacturing processes and reduce costs

Technical Skills

- **Programming Languages:** Python, Rust, Java, C++, LabVIEW
- **Web Development:** Full-stack proficiency (HTML, CSS, JavaScript, Node.js, React, SQL)
- **Blockchain and Crypto:** Smart contract development, Solidity, Rust for Solana, decompiling complex code
- **Software and Tools:** Creo, SolidWorks, AutoCAD, Windchill, Keyence Vision Systems
- **Machine Learning:** Experience programming AI-powered vision systems and analyzing data patterns
- **Systems Engineering:** Process optimization, compliance with ISO, GBT, ANSI, ASME standards
- **Hardware Expertise:** Custom PC builds, GPU mining rigs, and robotics

Education

Worcester Polytechnic Institute May 2013
Bachelor of Science in Mechanical Engineering *GPA: 3.4, High Distinction*

Certifications & Achievements

- **Certified SolidWorks Associate (CSWA)**
- ESET Cyber Security Awareness Training
- Henry Strage Innovation Award, 1st Place
- Sean Gleason Memorial Award

Notable Projects

- **Custom Battery Weld Inspection System:** Designed and programmed an AI-powered vision system to detect defects in laser welds, saving $100K monthly
- **Femto Connector Development:** Collaborated with a signal integrity engineer to create a high-performance connector with tight tolerances for Amphenol, successfully passing rigorous Telcordia testing
- **Blockchain Integration:** Built and maintained Solana-based applications, including token deployments and decentralized platforms

Interests

- Emerging technologies, blockchain, and cryptocurrency
- Building custom computers and hardware for gaming and professional applications
- Full-stack development and gamified AI chatbots

- Automating manufacturing and inspection processes using AI and robotics