Eric J. Rich

Engineering Innovation Specialist | CNC & Fabrication Expert | Open-Source Advocate

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About Me

I'm an Engineering Innovation Specialist with a unique blend of skills in CNC machining, 3D printing, macro programming, and computer programming. Over the years, I've learned to integrate all of my tools—both digital and physical—to solve complex problems efficiently. Whether it's developing custom hardware or automating processes with code, I enjoy the challenge of finding innovative solutions that combine fabrication and software development. I'm hands-on, continuously learning, and driven by a passion for bringing ideas to life.

What I'm Good At

My expertise lies in both fabrication and programming. I'm equally skilled in CNC machining and 3D printing as I am in developing custom programs and automating workflows through macro programming. I specialize in blending hardware and software to create innovative, practical solutions that improve efficiency and reduce downtime. By applying Lean principles, I optimize processes while ensuring a seamless transition from design to production. My continuous learning helps me stay on top of new fabrication and coding techniques, enabling me to tackle any challenge—whether it's solving production issues or creating highly customized automation solutions. I also enjoy mentoring teams and sharing my knowledge to help others grow in their technical capabilities.

Where I've Been

Freelance Contractor, R&D, and Startup Collaboration – EJRCNC **2020–Present**

In this role, I've tackled a variety of projects, from electrical work and tech support to custom fabrication and automation programming. I specialize in CNC machining, 3D printing, and developing custom macros to streamline production workflows. Collaborating with startups under NDA, I've managed the integration of both mechanical and electronic systems while automating many aspects of the process through code. I also mentor teams, sharing my knowledge in both fabrication and software to help them build more effective systems.

John R. Bromiley Machine Shop – CNC Setup/Programmer **2017–2020**

At Bromiley, I was responsible for programming and setting up CNC machines for military-grade products. I developed custom CNC programs and macros to optimize tool life and reduce cycle times. I also spearheaded research and development projects that improved production efficiency, integrating both hardware and software solutions to streamline processes and reduce downtime.

Globus Medical – CNC Machinist **2015–2017**

At Globus Medical, I focused on producing high-precision spinal implants with tight tolerances. My responsibilities included programming CNC machines and ensuring continuous quality control through frequent inspections. I also leveraged my programming skills to make real-time adjustments, ensuring the implants met stringent medical regulations. Collaboration with cross-functional teams was key to maintaining high production standards.

Scientific Instrument Services – CNC Machinist **2012–2015**

In this role, I managed multiple CNC machines and developed custom programs for producing highly specialized parts. I became proficient in OGP SmartScope routines, which significantly sped up the inspection process. By integrating automation scripts and macros, I helped streamline quality control processes, enabling more efficient and precise production while maintaining high-quality standards.

Edmund Optics – CNC Lathe Operator/Programmer **2008–2012**

At Edmund Optics, I produced military-grade night vision components, specializing in aspheric lenses. I frequently debugged Mastercam code to ensure production quality and collaborated closely with engineers to fine-tune the processes. My programming expertise allowed me to implement automated solutions, reducing manual intervention and improving overall efficiency in the production line.

MGP LLC (SGL Carbon Group) – CNC Operator/Programmer **2006–2008**

While operating FANUC lathes at MGP, I created aerospace and energy components, including parts for Tomahawk missiles. My role required absolute precision, and I played a key part in ensuring the components met strict quality standards. I also wrote custom CNC programs to enhance production workflows and reduce cycle times, resulting in more efficient operations.

H. Shoemaker Welding and Machine Shop Inc. – CNC Lathe Operator **2004–2006**

In this job shop environment, I produced a variety of parts for industrial machinery and aviation using CNC lathes. My ability to adapt quickly to different projects allowed me to deliver high-quality results in a fast-paced production environment. I also worked on improving setup efficiency, reducing machine downtime through customized macros.

Micro-Coax Inc. – CNC Lathe Operator (Swiss: Star & Citizen) **2003–2004**

At Micro-Coax, I specialized in operating Swiss-style CNC lathes to produce high-end coaxial cable connectors. I developed efficient setups to maintain consistent precision and quality. This experience sharpened my expertise in high-precision manufacturing, particularly with Swiss-style lathe operations, and prepared me for more complex technical challenges.

Creative House International – Machine Maintenance & Setup **2000–2003**

At Creative House International, I handled machine setup and maintenance for cookie cutter manufacturing. I was responsible for ensuring the machines ran smoothly and troubleshooting mechanical issues as needed.

On the Spot Tool Sharpening – Precision Tool Sharpening (Summer Job) **Summer 2001**

During the summer of 2001, I worked at *On the Spot Tool Sharpening* in Red Hill, PA. This experience allowed me to gain hands-on skills in precision tool sharpening for industrial applications. I learned about maintaining and sharpening tools used in various industries, which contributed to my growing expertise in maintaining high-quality, precision tools for fabrication and CNC work.

Education & Certifications

Throughout my career, I've made a point of continuing my education. In 2019, I mastered CNC optimization through DOOSAN's EZ-GUIDE Programming system. Earlier, I earned LEAN Level One Certification from DVIRC (2014-2015), which taught me to apply Lean methodologies to improve processes and reduce waste. I also completed an extensive CNC Training Program at MCCC in 2009, and I developed a strong foundation in CAD systems and metalworking techniques during my time studying Drafting Technology & Metal Tech at WCTS (2001-2003).