
HENDRIK BOTHA | MANUFACTURING ENGINEER

(831) 737 7777 | 60 Casa Street, San Luis Obispo, CA 93405

hendrikbothahtc@gmail.com

PROFESSIONAL SUMMARY

Engineer with a proven track record of improving manufacturing processes and quality systems in the aerospace industry. Skilled in design, manufacturing, programming, and automation. Passionate about hands-on problem-solving and utilizing technology for innovative solutions.

EDUCATION

California Polytechnic State University, San Luis Obispo

B.S. Manufacturing Engineering | December 2023

PROFESSIONAL EXPERIENCE

Rantec Power Systems

Quality Assurance Engineer | January 2024 - Present

- Developed a machine vision final inspection system for high-volume F35 assemblies, preventing several workmanship escapes each month and eliminating the source of the most common customer complaints.
- Managed the internal corrective action and audit programs as an effective RCCA team leader and AS9100 auditor, solving systemic corrective action and audit delinquency issues.
- Led P/DFMEA efforts to mitigate process and design risks for new products with complex build processes.
- Worked closely with metal fabrication and special process suppliers to solve external quality issues.
- Authored QMS policy for APQP elements to drive continuous improvement.

Manufacturing Engineering Intern | July 2022 - December 2023

- Developed and documented assembly and soldering process improvements for production.
- Designed and manufactured effective tooling to aid in assembly, soldering, and testing operations.
- Optimized manufacturing cell layouts to streamline processes.
- Designed and implemented new rework processes and tooling, saving \$100,000+ in scrap and labor costs.

SecurePRO

Repair Technician | February 2022 - July 2022

- Performed component-level troubleshooting to repair consumer electronics.
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RELEVANT PROJECTS

Machine Vision Final Inspection System | Rantec Power Systems | January - October 2024

- Designed and implemented a machine vision solution to identify defects including missing/incorrect hardware, scratches, illegible/incorrect labels, bent pins, foreign objects, and more.
- Developed entirely custom reporting & ERP integration software with Python and SQL for product traceability and variation management.

Automated Labeling System | Rantec Power Systems | September 2023

- Built a custom automatic labeling system to eliminate hand-written labels on product.

IME Articulated Robotic Arm Cell | Senior Project | September 2022 - June 2023

- Designed and implemented an instructional robotic cell with a Kawasaki CX110L industrial robot.
- Integrated advanced LIDAR safety systems to ensure safe and reliable operation.

Smart Manufacturing IoT Dashboard | IME Dept. Project | January 2023 - March 2023

- Built a webapp to visualize real-time data and historical KPIs for CNC mills and lathes.
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SKILLS AND COMPETENCIES

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| ✓ CAD/CAM - SolidWorks, Fusion360, MasterCam, HSMWorks | ✓ GD&T, Drafting |
| ✓ CNC & Manual Machine Tool Operation | ✓ SPC/Data Analytics - Excel, Minitab, JMP |
| ✓ Metal Additive MFG. & Generative Design | ✓ Design for Manufacturing |
| ✓ Industrial Robotics & Automation, PLCs | ✓ Python, SQL Programming |