Mark Bentz   EMC Hire Date: 12/11/2023
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Summary

With extensive experience in programming languages such as Python, Rockwell (Allen-Bradley), Siemens, and VT Scada, along with robust skills in PLC programming, control panel design, and OT cybersecurity, I excel in seamlessly integrating complex systems. My background includes strong project management, HMI design, and proficiency in networking protocols like Modbus and Ethernet TCP/IP. I leverage tools such as Agilicus and Cisco for efficient system integration, ensuring operational excellence and compliance with engineering standards.

Professional Experience
Project Engineer
Electric Machine Control, Trussville, AL
December 2023 – Present

- **Key Responsibilities:**
  - **Programming**: Programing for Power, Water, & Wastewater Plant projects with VT Scada, Survalent, Rockwell (Allen-Bradley), PLCNeXt, Opto 22
  - **Control Panel Design**: Design Control Panel drawings, components, and I/O for projects
  - **OT Cybersecurity**: Develop MFA capability through Open ID Connect with Agilicus and Auth0 for VT Scada, Experience with setting up OT Network
  - **Panel Testing**: Comprehensive Testing of hardware and logic before sending out to installation of panel.
  - **Submittals and Engineering Requirements**: Create drawings with AutoCAD for customer requirements, revise if necessary for customer approval
  - **HMI Design**: Design HMI for operators and collaborate with customers to make changes for their specific needs of the project
- **Achievements:**
  - **Completed Projects:** Integration for Wastewater Plant control from equipment to SCADA with Modbus, DNP, 4-20mA, & Ethernet TCP/IP, Survalent integrations for RTU Reporting, VT SCADA Plant setup for monitoring and control of pumps and chemicals

Senior Process Engineer
Hyundai Mobis, McCalla, AL
January 2021 – December 2023

- **Key Responsibilities:**
  - **LOB Document Creation**: Developed Line of Balance (LOB) documents using MODAPTS for Cycle Time and Line Balancing.
  - **Assembly Team Supervision:** Acted as Interim Supervisor for Assembly Team Members, conducting training and evaluation.
  - **Robotics and Equipment:** Proficient in troubleshooting and operation of various plant equipment including Automatic Guided Vehicles, Kuka Robot, Servo Press, Atlas Copco Tools, etc.
  - **PLC Programming:** Programmed Atlas Copco tool controller PLC Logic to enhance interlock systems and develop new tightening programs for assembly.
  - **Quality Control:** Maintained and updated Failure Analysis and Control Plans (PFMEA & Control Plan) and modified Manufacturing Execution Systems (MES) for torque verification and part variant solutions.

- - **Work Instructions:** Created detailed Work Instructions for Front and Rear Chassis Assembly Line.
  - **Equipment Management:** Managed Purchasing and Approval processes for new equipment using SAP and VAATZ.
  - **Plant Layout Design:** Designed Plant Layout using AutoCAD LT, focusing on Lineside Packaging and Part Feeding methods.
  - **Research and Development:** Led Research and Development meetings to implement series manufacturing processes and address engineering changes using CATIA and OPR3D.
  - **Assistive Devices:** Designed 3D concepts for assistive assembly devices from prototypes to series production using CATIA.
  - **Maintenance Strategy:** Devised maintenance spare parts strategy including calibration plans and mean time between failure analysis.
  - **Process Improvement:** Designed new plant processes and implemented capacity increases, collaborating with other departments.
  - **Collaboration and Quality Improvement:** Collaborated with Mercedes-Benz engineers to improve vehicle quality through stable process control methods.
  - **Data Automation:** Developed Python automations to gather and report data.
  - **Tool Programming:** Programmed tool equipment to reduce failure rates and prevent misuse through innovative torque curve analysis, fastener considerations, and multiple tool types.
  - **Audit Preparation:** Prepared and presented Engineering VDA 6.3 Audit materials to meet series production requirements.
  - **Contingency Planning:** Developed plant Contingency plans to minimize process downtime due to machinery malfunction.
  - **Project Management:** Managed Engineering Project Budgets for improvement projects, interviewed candidates for technical roles, and managed contractor relationships for large projects.
  - **Root Cause Analysis:** Conducted Root Cause analysis of production issues using 8D and 5 Why methods.
  - **Engineering Management:** Held interim Engineering Manager duties and managed project timelines, budgets, and schedules.
  - **Collaboration and Communication:** Worked closely with contractors and departments to achieve project objectives, scheduled contractor work, and provided clear project direction.
  - **Tooling and Quality Assurance:** Designed and 3D printed assembly jigs to enhance part quality and control processes, used FARO arm CMM for dimensional measurements and compliance with drawing specifications.
  - **International Collaboration:** Demonstrated ability to work effectively with colleagues from diverse cultural backgrounds including German and Korean.
- **Achievements:**
  - **Completed Projects:** Fully automated Press and Robot Cell, Increased Production capacity with reduction of total stations, Custom Material handling projects for part assembly, Tool Interlocks and Time study which resulted in quality and cycle time improvements, & Solved quality issues to prevent repeat occurrences

Co-Op Global Hardware Manufacturing
NCR Corporation, Global HQ, Atlanta, GA
May 2018 – December 2019
- **Key Responsibilities:**

- ○ **Design:** Successfully designed new test procedures and prototype test equipment for use in manufacturing plants to improve quality of tests | CAD Design (CREO and Solidworks)
- ○ **Prototype Parts:** On-site prototype real parts | Machining Parts | 3D Printing | Electrical Soldering
- ○ **Finite Element Analysis Simulation:** FEA analysis to improve 3D print design by reducing thickness and cost of materials
- ○ **Programming:** Python (Application Development / Advanced FFT Audio Analysis)
- ○ **International Collaboration:** Demonstrated ability to work effectively with colleagues from diverse cultural backgrounds including India and Scotland.
- **Achievements:**
  - ○ **Completed Projects:** Skimming Protection Solution (SPS) test kit for electrical boards in manufacturing process, Handheld Audio Testing Device and Procedures for Manufacturing quality assurance, & Out of Box Failure (OBF) reporting SharePoint

Student OIT Worker
OIT at Auburn University, Auburn, AL
August 2018 – December 2020
- **Key Responsibilities:**
  - ○ **Inventory:** Manage lease computer inventory for shipping each month, Transferring data and Wiping Hard Drive Data (DBAN)
  - ○ **OS Imaging:** Install BIOS, Drivers, & Deployment Server Security for all new laptops, computers, portable devices
  - ○ **Communication and Interpersonal Skills:** Troubleshooting issues and resolving support tickets
  - ○ **Programming:** Python (Application Development / Advanced FFT Audio Analysis)
  - ○ **International Collaboration:** Demonstrated ability to work effectively with colleagues from diverse cultural backgrounds including India and Scotland.
- **Achievements:**
  - ○ **Completed Projects:** Installing lease computers for Auburn Staff on Campus & Troubleshooting IT Tickets

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Technical Skills
- **Programming Languages:** Python, Rockwell (Allen-Bradley), Siemens, Opto 22, VT Scada, Survalent, Maple Systems, MATLAB, ToolsTalk & ToolsTalk 2, PLCNeXt
- **Integration Tools:** Agilicus, Cisco
- **Operating Systems:** Windows, Linux, & Mac
- **Databases:** SAP, SQL Server, ToolsNet 8
- **Networking:** Ethernet TCP/IP, Modbus, DNP 3.0, Cellular
- **Other:** FARO Portable CMM Measuring

Education
Auburn University | Auburn, AL
Bachelor of Mechanical Engineering | December 2020

Projects
Senior Design Project
AEGIS Deep Space Satellite, Advanced Topics Team
- Advanced research of Orbital Mechanics, Propulsion, and Radiation to communicate with other teams

- Trade Studies (Thrusters, Air Bearings, Reaction Wheels)
- Collaborated with the University of South Alabama to design a Reaction Wheel Test
  - Developed MATLAB code with modified Fresnel equations and NASA MICE library ephemeris data to successfully simulate orbit path transfers and heat absorbed through CubeSat surface

Certificates and Involvements
- Rockwell CCP153 (Advanced) | Certificate Alabama RTP
- AUFSAE Team Member | 2016-2017 Auburn University
- Dean's List | Spring 2017 and Summer 2020 (Auburn University)
- Achievement, Board of Trustees, and H.K. Porter Scholarships (Auburn University)
- Volunteering at Auburn Middle School | Learn Twice Program
- Volunteering at Horizons Georgia Tech | Mystery Reader and Critique Judge