

# Matthew Adam

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Mechatronics Engineer currently a part of the data science team at Saint Gobain R&D. Seeking a permanent position in Saint Gobain as an Mechatronics, Industry 4.0, Controls, or Automation Engineer.

## CORE SKILLS:

**Certifications:** Python ML Certification, SolidWorks CSWA, Six Sigma Lean Yellow Belt, Ignition Developer Certification, MATLAB Certification

**Automation:** Allen-Bradley, Siemens, SCADA/HMI design, PLC programming, OPC-UA, MQTT, IoT Sensor Systems

**Software:** Django web framework, SQL design, RESTful API design, Computer Vision, Machine Learning, Azure and AWS Cloud Services (Ongoing Certification), Linux RHEL, CI/CD, docker containerization

**Process Engineering:** Kaizen Continuous Improvement, Root Cause Analysis, FMEA

**Hands-On Manufacturing:** FDM and Resin 3D Printing, CNC Milling, Injection Molding, Extrusion, Solidworks FEA, CAD/CAM Design for Manufacturability

## PROFESSIONAL EXPERIENCE:

### **Saint Gobain R&D: Essentials of Manufacturing (Mechatronics Engineer)**

**Jul 2024 - Present**

- Developed and deployed web-based automation solutions across laboratory equipment and pilot-scale production lines, reducing manual tasks and enabling data-driven decision-making in the R&D process.
- Integrated laboratory equipment with custom sensors, APIs, PLCs, OPC-UA, and other IIoT technologies to stream data into centralized dashboards for real-time monitoring.
- Delivered a sensor platform assembly and HMI for a product application testing lab, resulting in improved experiment reproducibility and a 90% reduction in manual data collection.
- Designed a web-based simulation tool for industrial glassmat ovens, allowing engineers to model heat transfer efficiency and identify optimal operating conditions.
- Collaborated with the Life Sciences design team to implement a series of sensors into a T-Cell cancer therapy culture chamber, improving culture growth efficiency and ensuring rapid, high-quality therapy preparation.
- Deployed SQL-based data pipelines to capture, store, and analyze real-time lab data, enabling Six Sigma process control on pilot scale production lines.
- Participated in four kaizen events across multiple saint gobain manufacturing plants, supporting process, quality, and automation engineering teams.

### **WPI: IT Service Professional**

**Aug 2023 - May 2024**

- Provided technical support to end-users troubleshooting IoT devices, hardware, software, and network integration.

### **WPI: Engineering Finance Teacher Assistant**

**Aug 2022 - May 2023**

- Guided students in applying financial concepts and operation analysis to engineering decisions including FMEA, cost-benefit review, project NPV, and root cause analysis.

### **Wittmann USA: Mechanical Engineering (Assembly Design Team)**

**May 2022 - Aug 2022**

- Led rapid-prototyping and design of custom assembly components using CAD, FDM and resin 3D printing, and CNC manufacturing to improve turnaround time for custom orders.
- Constructed a custom polymer grinder and HMI for integration with a redesigned customer production cell.

## ENGINEERING PROJECTS:

### **Automated Quality Inspection Machine (Maple Hill Golf) (WPI Major Qualifying Project)**

**Aug 2023 - May 2024**

- Designed and built a multi-sensor inspection machine and HMI to verify product characteristics (weight, profile, dimensions) for product delivery resulting in reduced manual quality measurements by 90%.

### **Magnetic Cableless Elevator Test Rig (Otis Elevator) (WPI Capstone Project)**

**Mar 2023 - May 2023**

- Collaborated with Otis Elevator Company to retrofit a legacy elevator test rig with cableless magnetic braking and propulsion systems.

### **Automated Fruit Classification Machine (Arava R&D) (WPI Interactive Qualifying Project)**

**Jan 2023 - Mar 2023**

- Integrated computer vision and machine learning technology with existing HMI and PLC hardware to automate measurement and classification research tasks that directly improve harvest yield in desert conditions.

## EDUCATION:

**Worcester Polytechnic Institute (WPI), Worcester, MA**

**May 2024**

Mechanical Engineering (BS) and Industrial Engineering (BS), Information Systems (Minor)