Shivam Bhardwaj

Senior AI-Augmented Robotics & Automation Engineer

San Jose, CA · 929-289-4539 · curious.antimony@gmail.com
shivambhardwaj.com · LinkedIn · GitHub · X

H-1B Transfer Ready

SUMMARY

6+ years bridging **Mechanical Design** (Siemens NX), **Software** (Python/ROS/C++), and **Operations**. Specialist in **AI-Accelerated Engineering**—leveraging LLMs and modern AI stacks to rapidly deploy full-stack automation tools, reducing development cycles from weeks to days. Proven track record delivering critical hardware for **Meta, Applied Materials, Amazon Robotics, and Saildrone**.

TECHNICAL SKILLS

AI & Robotics: C++, Rust, Python, ROS/ROS2, LLM Integration, CV (OpenCV, YOLO)

Automation: Industrial IoT, PLC (Beckhoff), LabView, Sensor Fusion

Hardware/CAD: Siemens NX (Open API), SolidWorks, Rhino3D, GD&T, Prototyping

Process/Tools: 5S Methodology, ERP Integration, Git, Jira, Wiring/Harnessing

PROFESSIONAL EXPERIENCE

Mechatronics Engineer — Design Visionaries, San Jose, CA — **Mar 2023 – Present**

Clients: Applied Materials, Saildrone, Metal Recycling

- **Applied Materials:** Architected web-based parametric design engine (AutoCrate) reducing design time from **2 days to <1 hour (100x speedup)**. Built intuitive GUI for automatic ASTM-compliant manufacturing drawings.
- **Saildrone:** Restructured harnessing workflows using **5S Methodology** to increase throughput. Overhauled RMA process and ERP implementation to reduce inventory discrepancies and streamline design-manufacturing feedback.
- **Metal Recycling (IIoT):** Designed and deployed laser metrology system (0.02" accuracy) integrated with cloud ERPs to automate weighing and material classification.

Engineering Manager — Advanced Engineering Services, San Jose, CA — **Sep 2022 – Mar 2023**

Clients: Meta (Facebook) & Applied Materials

- **Meta:** Led design of forensic analysis workcell for VR/AR supply chains. Integrated **DoBot CR5** cobot with RF sensors, thermal imaging, and optical cameras for automated anomaly detection.
- **Applied Materials (AR):** Managed industrial design (Rhino3D) and fabrication of next-gen **AR Glasses** (Light Engine & Waveguide), delivering the first functional prototype to leadership.

Senior Robotics Engineer — Velodyne Lidar, San Jose, CA — **Jan 2021 – Sep 2022**

R&D Software Team Lead

- **Amazon Scout Partnership:** Designed and fabricated early-stage sensor fusion rigs for the **Amazon Scout** delivery robot, enabling critical perception data collection.
- **Data Collection (IEAB):** Led data collection operations for International Emergency Autonomous Braking testing at AAA Concord GoMentum Station.
- **Fleet Management:** Managed 5 autonomous research vehicles. Developed C++ scripts for PTP time sync between LiDARs and embedded IMUs, improving the Vella vision stack.

Robotics Software Engineer — Monogram Orthopedics (ARI), Austin, TX — **Jan 2020 – Dec 2020**

- **Surgical Navigation:** Developed core registration algorithm to locate bone structures relative to a **Kuka Robot** (Accuracy: <1mm, Latency: <2s) using OptiTrack motion capture.
- **Medical Device Compliance:** Integrated algorithms via **DDS & Protobufs**; executed Hardware-in-the-Loop (HIL) testing and generated FDA-compliant traceability matrices.

EDUCATION

M.S. Mechatronics & Robotics — New York University
Research: AI4CE Lab – Real-time visual localization using Deep Learning (SLAM without GPS)

B.Tech Electronics — I.P. University, Delhi
Award: Top 3 University Projects – Developed ArduPilot-based Autonomous Drone