Manan Singh

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Education

Purdue University — West Lafayette, IN
B.S. in Robotics Engineering Technology, Minor in Computer Science — GPA: 3.59 — *Aug. 2023 – December 2027*

Experience

EverestLabs — Fremont, CA
Robotics Engineering Intern — *May 2026 – August 2026*

- Designed a suction/blowoff muffler system that cut robot noise to OSHA-safe dB levels at lower cost than COTS alternatives; validated across lab, MRF, and field sites
- Designed and fabricated an AC adapter plate for a robot controller, improving AC serviceability. Oversaw the installation of 10 in production
- Tested and calibrated 20+ Fanuc robots, controllers, and Labjacks, diagnosed hardware faults, and developed and documented testing methods

Toyota Motor North America — Princeton, IN
Production Engineering Co-op — *August 2025 – December 2025*

- Applied Toyota Business Practices to lead RCA of automated paint inspection systems across five plants, analyzing 15,000+ vehicle data points and Gage R&R trials; identified sizing inconsistency and classification accuracy ceiling, informing the direction of future validation trials
- Practiced Toyota's "Go and See" (genchi genbutsu) approach, observing issues on the production line and speaking with Team Members to apply TPS principles; developed recommendations projected to cut false-defect rates by up to 80%, including camera position validation, audit-process standardization, and alignment with quality standards
- Conducted data-driven analysis using Power BI and manual audit data, improving defect detection reliability and informing $3.4M+ in capital project planning for inspection system optimization
- Supported cross-functional projects involving 3D scanning and Navisworks modeling for refurbishments and layout modifications, enhancing visualization and planning for equipment upgrades

Bechtel Innovation Design Center (Purdue University Makerspace) — Oct. 2024 – Present
Printing & Prototyping Lab Supervisor — *West Lafayette, IN*

- Teaching students to operate metal and nonmetal laser cutters as well as FDM, SLA, and SLS 3D printers
- Leading and training 11 Peer Mentors in machine operation, student support, and shop safety
- Writing and following SOPs to provide manufacturing services and complete machine maintenance/upkeep
- Mentored 100+ students in design, prototyping, and manufacturing processes

Projects

Culverizer | *Combat Robot* — April 2022 – Present

- Designed and manufactured a robust 3-lb battlebot leveraging manufacturing techniques involving laser cutting, 3D printing, waterjet cutting, and milling that won 33 of 56 battlebot matches (59% win rate)
- Optimized weapon blade geometry, strength, and weight with FEA to build a 1,000+ Joule weapon system capable of incapacitating other robots instantaneously while maintaining durability and repairability

Awards and Certificates

- 2022 FIRST Robotics Competition World Champion (team254.com/first/2022)
- OSHA 10 Certification
- Finite Element Analysis Milestone Certificate (Purdue University, 2023)

Skills

Mechanical: Solidworks, Siemens NX, Fusion 360, NavisWorks, FEA, PDM, DFM, CAM
Software: ROS2, Python, C/++, Java, PLC Programming