Akshit Monga

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PROFESSIONAL SUMMARY

Biomedical Engineering graduate with experience in AI/ML-driven medical device development and clinical laboratories. Spent the last two years split between clinical lab work at Eurofins and R&D engineering at Jabil. Starting an Electrical and Computer Engineering Master's this fall to deepen my hardware and signal processing skills for medical devices.

EXPERIENCE

Medical Laboratory Assistant   Sunnyvale, CA
Ascend Clinical Eurofins| *V&V, Root Cause Analysis, LIMS, CLIA, CAP*   July 2025 – Jan 2026
- Executed routine testing and quality control procedures in an CLIA-regulated clinical laboratory, managing 200+ samples per day
- Managed LIMS documentation for 500+ patient samples weekly, tracking problem accessions and Tests in Question through comprehensive deviation reporting and corrective action workflows
- Maintained multi-department collaboration between internal teams and Boston Heart Diagnostics to resolve missing tests, optimizing sample shipping logistics to minimize turnaround time while maintaining chain of custody
- Set up automated instruments and performed minor hardware troubleshooting, ensuring testing integrity and sample continuity

Research and Development Engineering Intern   San Jose, CA
Jabil Circuit Inc.| *Python, LangChain, RAG Pipeline, GPT-4o, ChromaDB, Vector Databases, NLP*   August 2024 – June 2025
- Architected and deployed AI-powered Design for Excellence (DfX) knowledge system that reduced engineering design time by 87%, accelerating PCB and medical device design cycles for contract manufacturing operations
- Built end-to-end Retrieval-Augmented Generation (RAG) pipeline using Python, LangChain, ChromaDB vector database, and GPT-4o to enable natural language trained on 500+ pages of manufacturing constraints across Design for Manufacturability, Assembly, Testing, and Sustainability documentation.
- Engineered semantic search system using text-embedding-ada-002 and RetrievalQA architecture to automatically retrieve machine-specific design constraints from centralized knowledge base, reducing design iteration errors for prototype and MVP creation
- Validated system performance through controlled benchmark testing with real manufacturing engineers, demonstrating consistent 70%+ time savings across multiple design types with cloud integration via Azure and Microsoft Teams
- Documented complete system architecture, API specifications, and deployment procedures in comprehensive reporting, enabling seamless handoff for enterprise-scale implementation across Jabil's global facilities

EDUCATION

San José State University – San Jose   San Jose, CA
Bachelor of Science, Biomedical Engineering

PROJECTS & RESEARCH

BioMEMs Prosthetic| *Arduino, Signal Processing, System Design, MEMs biosensors, 3D Modeling & Fabrication*
- Engineered 3-phase EMG control system using MyoWare biosensors and Arduino Uno achieving >85% signal-to-motion classification accuracy for multi-degree-of-freedom prosthetic hand control
- Implemented real-time digital signal processing algorithms (moving average filtering, adaptive hysteresis thresholding) and developed scalable embedded framework enabling future expansion to 3+ fingers
- Designed and fabricated modular hand components using FDM 3D printing, optimizing tendon routing system and mechanical linkages through >10 iterative design cycles to achieve proper articulation

Coronary Stent Design| *SolidWorks, Mechanical Testing, Rapid Prototyping, Cardiovascular Implantable Devices*
- Designed three stent geometries in SolidWorks; performed FEA achieving >20% stress reduction and >2.0 safety factor; compared nitinol vs. Ti-6Al-4V for fatigue life; fabricated geometric prototype via 3D resin printing

Microneedle Insulin Delivery Model | *COMSOL, CFD, Biocompatible Materials, Pharmacokinetics, Diffusion Modeling*
- Designed 256-needle biocompatible array in COMSOL Multiphysics, optimizing microneedle geometry for uniform insulin dosage through computational fluid dynamics analysis; validated uniform dosing performance in agarose tissue analogs

TECHNICAL SKILLS & CERTIFICATIONS

Programming & Engineering | SOLIDWORKS Certification, Python (NumPy, pandas, PyTorch), R, MATLAB, JavaScript, Raspberry Pi, Arduino, Microcontrollers, Git/GitHub, 3D Modeling, LabVIEW, Statistical Analysis
Lab Techniques | ELISA, HPLC, PCR, LC-MS, MALS, Gel Electrophoresis, SEM, FTIR