Sohan Lele

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EDUCATION

University of Pennsylvania (GRASP Lab) — Aug. 2025 – May 2027
MSE in Robotics — *Philadelphia, PA*

University of California, San Diego — Sep. 2021 – Jun. 2025
BS in Mechanical Engineering, Specialization in Robotics and Controls — *La Jolla, CA*

EXPERIENCE

IRIX | tryirix.com — Jan. 2026 – Present
Co-Founder & CEO | Product Management, Wearable Software Systems — *Remote*
- Leading end-to-end product development of a smart-glasses-based software platform delivering real-time, hands-free personal training
- Defined product requirements, system architecture, and feature roadmaps across wearable software, audio interfaces, and context-aware interaction
- Designed wearable-first UX optimized for voice, audio, and heads-up displays under latency, power, and usability constraints
- Coordinating pilots with hardware partners and gym operators to validate deployment feasibility, reliability, and user experience

Eversun Energy Inc. — Jul. 2024 – Sept. 2024
Mechanical Engineering Intern | Prototyping, Mechanical Design, Ergonomics, Fabrication — *San Diego, CA*
- Directed end-to-end design and fabrication of the Apollo X eTower alpha prototype, taking the system from concept to demo-ready hardware
- Redesigned gas-strut lever actuation to eliminate cable fraying and improve ergonomics and reliability; featured in investor demos
- Worked cross-functionally with engineering, design, and manufacturing teams to accelerate iteration while maintaining durability and manufacturability

SoundImaging — MRI Headphones (UCSD Senior Design) — Jan. 2025 – Jun. 2025
Product Design Engineer | Medical Devices, Acoustics, Mechanical Design — *La Jolla, CA*
- Designed a pneumatic headphone system enabling clear audio during MRI scans with ambient noise up to 130 dB
- Developed modular transducer housings and gasket systems to support rapid iteration and technician usability
- Improved signal-to-noise ratio by $\sim$45% through material selection and acoustic testing

PROJECTS

Steerable Needle Position Estimation — Multi-View Computer Vision (UPenn) — Aug. 2025 – Dec. 2025
Perception Systems Project | Medical Robotics, Computer Vision — *Philadelphia, PA*
- Designed a multi-view perception pipeline to estimate the 3D tip position of a steerable needle navigating a reflective gel medium
- Integrated segmentation models with classical vision techniques including skeletonization, endpoint detection, and multi-view correspondence
- Reconstructed continuous 3D trajectories from synchronized camera views and validated against a deformation model with $\sim$7% relative error
- Identified and mitigated failure modes related to glare artifacts, skeleton branching, and frame synchronization

Ambient AI Clinical Documentation — Human Systems Engineering (UPenn) — Aug. 2025 – Dec. 2025
Systems Design Project | AI Systems, Healthcare, Human Factors — *Philadelphia, PA*
- Conducted a human-systems evaluation of an ambient AI clinical documentation system in a pediatric care setting
- Performed task analysis and workflow decomposition to identify risks related to automation bias, overreliance, privacy, and clinician trust
- Designed a gated, human-in-the-loop workflow enforcing explicit consent, visible system status, and mandatory clinician review
- Authored an implementation checklist specifying hardware setup, training, data governance, and feedback loops required for safe scaling

PrepCaddy — Human-Centered Hardware Design (UPenn Product Design) — Aug. 2025 – Dec. 2025
Product Design Engineer | User Research, Prototyping, Fabrication — *Philadelphia, PA*
- Led human-centered design process including pain-point analysis, user interviews, iterative prototyping, and validation
- Translated qualitative feedback into mechanical design changes addressing ergonomics, stability, and workflow efficiency
- Designed and fabricated a modular hardware system with magnetically-attached components and measured-volume staging
- Incorporated manufacturing, material selection, and assembly constraints into final design decisions

SKILLS

Robotics & Perception: Computer Vision Pipelines, Multi-View Geometry, Sensor Integration, ROS
Mechanical Design & CAD: Fusion 360, SolidWorks, AutoCAD, Rhino 7, ANSYS
Prototyping & Fabrication: 3D Printing, CNC Machining, Laser Cutting, Machine Shop Tools
Programming: Python, MATLAB, Git