Aaditya Sakhardande

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EDUCATION

Arizona State University, Tempe, AZ, USA ***Expected May 2026***
Masters in Robotics and Autonomous Systems (Electrical Engineering) 3.61 GPA
Mukesh Patel School of Technology Management and Engineering, Mumbai, India ***August 2024***
B.Tech. Major in Electronics and Telecommunication 3.11 GPA

TECHNICAL SKILLS

Programming: Python, C++, JavaScript, Bash, Pandas, OpenCV, TensorFlow, PyTorch, SQL, PHP.
Software: MATLAB/Simulink, ROS2, Linux, Git, Anaconda, AutoCAD, SolidWorks, RepetierHost, Proteus, NerfStudio.
Other Skills: Project Management, GANs, Docker & REST APIs, Image Segmentation, PLCs, Control Systems (PID, Filter), NLP.
Certifications: 100 Days of Code (Python – Udemy), Advanced Python (LinkedIn), Learning C# (LinkedIn)

WORK EXPERIENCE

Leyline Technologies, Spokane, WA - *Product Engineer* ***June 2025 – August 2025***
• Tasked to design and document 3 AI models that optimize product features in alignment with real-time robotics systems.
• Iterating 2 data-driven prototypes, leveraging Python and internal tools to improve model accuracy and pipeline clarity by 20%.
• Collaboration with cross-functional teams to integrate product requirements into modular designs for robot-adjacent use cases.

Cartken | Arizona State University, Tempe, AZ – *Prototype Team Lead* ***May 2025 – August 2025***
• Designed and prototyped robotic subsystems using reclaimed components, focusing on hardware and embedded control.
• Analyzed robotic platforms' environmental impact and hardware design, sustainable manufacturing, and reuse strategies.
• Applied electronic design and embedded programming to implement core functions in autonomous robotic systems.

MaitriAI, Mumbai, IN – *Software Developer* ***December 2023 - May 2024***
• Trained CNN model reaching 98% accuracy for document identification. Enhanced Biometric OCR Software, extracting text with 94% precision from scanned documents. Implemented SQL database to store extracted documents and texts.
• Conceptualized enterprise architecture of LMS platform, enabling creation and management of training programs.
• Built and deployed 12 APIs employing Python libraries such as PyTesseract, TensorFlow, and FlaskAPI.

MPSTME University, Mumbai, IN – *Student Researcher* ***August 2023 – November 2023***
• Led **Online Canteen Ordering Management System** project, building a web app for online orders, customizable menus, and tracking 300+ order statuses in real time.
• Leveraged and maintained system using **HTML, CSS, JavaScript, PHP, MySQL, and XAMPP server**.
• Coordinated UI design, integrated payment gateway, and optimized SQL schema for transactions and metadata storage.

RESEARCH PUBLICATIONS

Robotic Gait Trainer with Exoskeleton *(Research – Accepted, Publication Pending)* ***August 2024, Ongoing***
• Headed research on robotic gait trainer for spinal cord injury patients, conducting a 25-year trend analysis of functional models.
• Analyzed rehabilitation practices and BCI strategies to develop six optimal models for neural function recovery.
• Presented at the *International Conference on Materials, Robotics, Automation, Computer and Control (ICMRACC 2025)*; paper accepted for publication.

PROJECTS

Drone Vision Navigation Framework *(Project)* ***Spring 2025 – Summer 2025***
• Engineered a real-time vision system for the Parrot Mambo UAV drone using MATLAB/Simulink, achieving 92.3% landing accuracy across 50+ test flights via closed-loop feedback control.
• Used HSV color segmentation and centroid localization on a 640x480 video feed at 30 fps to extract spatial features in real-time.
• Designed control laws using normalized image-plane error, cutting lateral drift by over 83% and improving convergence speed.

Real-time Video Inpainting Software *(Project)* ***Spring 2025***
• Built an object removal pipeline using Mask R-CNN and OpenCV (96% mask accuracy, 30 fps), integrating GAN-based inpainting models (LaMa, Stable Diffusion) for texture-consistent restoration.
• Optimized for achieved 1,000 frames per minute, supporting videos up to 1080p resolution with minimal artifacts.

Autonomous Maze Solver using MyCobot Pro 600 *(Project)* ***Fall 2024 – Spring 2025***
• Engineered and built digital twin to simulate forward and inverse kinematics, ensuring precise and efficient navigation.
• Programmed MyCobot Pro 600 to autonomously solve a 4x4 maze, optimizing path planning and obstacle detection.
• Automated and executed a maze-solving algorithm incorporating Python, MATLAB, and SOLIDWORKS, merging socket programming and image processing for real-time maze recognition.

LEADERSHIP & INVOLVEMENT

- **PlaceComm Head**, (MPSTME): Class representative for strategic planning and placement communication.
- **Implementation of 3D Holograms within 5G framework** *(Research).*
- Drafted and programmed a real-time hand gesture-based mouse control system using OpenCV, MediaPipe, and PyAutoGUI.
- Collaborated with Earth5R (UNESCO), for environmental sustainability.
- Course on 3D Printing, printed multiple objects. Crafted using AutoCAD, Repetier Host, Solidworks.