Sameerjeet Singh Chhabra

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SUMMARY

Robotics and Automation Engineer with a bachelor's in mechanical engineering. I am Skilled in Python, Machine Learning, C++, MATLAB, and ROS2. Strong critical thinking skills, enabling effective problem-solving and innovative solutions in autonomous systems.

EDUCATION

Master of Science Graduating May 2026
Arizona State University, USA GPA: 3.94/4.0

- Robotics and Automation Engineering (Concentration Systems Engineering)

Bachelor of Technology Graduated July 2022
Chhattisgarh Swami Vivekanand Technical University, India GPA: 8.73/10.00

- Mechanical Engineering

PUBLICATIONS

- Design and Inverse Kinematics Analysis of Cable-Suspended Parallel Robot FarmPet for Agricultural Application Published in: International Journal for Research in Applied Science & Engineering Technology (IJRASET) - Feb 2023

TECHNICAL SKILLS

Robotics Tools: SolidWorks, ROS, MATLAB, Simulink, AutoCAD, Arduino, Raspberry Pi
Leadership & Teamwork: Professional Mentoring, Strategic Leadership, Presentation
Data Science Tools: Pandas, NumPy, Excel, SQL, TensorFlow, PyTorch, Scikit-learn, OpenCV
Programming Languages: Python, C, C++, Data Structures and Algorithms
Certifications: IBM Machine Learning Specialization - July 2024, IBM Data Science Specialization - Dec 2023, Deep Learning Specialization (DeepLearning.AI) - April 2025

PROFESSIONAL EXPERIENCE

Physics Teaching Aide, Department of Physics, ASU Tempe AZ USA January 2025 - Present

- Working as a Physics Teaching Aide, managing 48 students, conducting undergraduate lab experiments, assisting students with core physics concepts, guiding them through procedures, and ensuring accurate data collection and analysis.

Data Scientist, ANYTHINGAI Cyber Pvt. Ltd, Hyderabad, India July 2023 - March 2024

- Streamlined Data Extraction: Cut down web data extraction time by 98% leveraging Selenium, BeautifulSoup, and APIs
- Data Analysis and Insights: Analyzed data from 10+ decentralized exchanges. Improved predictive accuracy using AutoGens
- Trading Bot: Launched ML-powered trading bot on AWS, refining strategies with real-time processing and boosting profit probability by 4x

ACADEMIC PROJECTS

Voice-Operated Mobile Manipulator January 2025 – April 2025

- Integrated TurtleBot4 with myCobot 280 for autonomous pick-and-place using YOLO object detection, enabling efficient shelf tasks. (GitHub)
- Developed ROS2 Python GUI for real-time data visualization and robot control, significantly enhancing system interaction and user experience.
- Wrote custom URDF and geometric inverse kinematics solver for precise movements.

UAV Dynamic Landing and Line Tracking System January 2025 - April 2025

- Designed a 2-phase autonomous UAV system in MATLAB/Simulink for line tracking and visual marker landing. Tested on a real drone. (GitHub, Video)
- Used 7-region binary image analysis for reliable path detection and descent triggering
- Completed 200+ flight tests with <5-pixel marker alignment accuracy during tracking

Maze Solving 6-DOF Robotic Arm October 2024 - November 2024

- Developed a vision-based solution using OpenCV in Python to process camera feed and map it to robot space with linear algebra (GitHub, Video) to solve a maze lying on a table
- Created a URDF file for myCobot 600pro robotic arm consisting of 6 joints
- Programmed a geometric inverse kinematics solver for 100% positioning accuracy

Cable-Suspended Parallel Robot for Agriculture August 2021 - July 2022

- Led a team of three in formulating and building a cable-driven Cartesian robotic system for precision farming
- Built a cable-driven cartesian robot with 80% farming autonomy, deploying cables, stepper motors, CNC shield, and Arduino Uno
- Built a 3-ft prototype accomplishing 0.5mm accuracy with custom inverse kinematics. (GitHub, Video)

ACHIEVEMENTS

Pu Automations Hackathon 2025, sponsored by Los Alamos National Laboratory at ASU
March 2025

- Developed an automated system for sequencing device handling, from flow cell package opening to insertion into sequencer. Placed 2nd out of 12 teams (GitHub)

GATE Mechanical Engineering 2022, IIT India
February 2022

- Qualified the exam for graduate admissions with 92.22 Percentile out of 90,000 candidates