

SUBHASH CHANDRA

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Norman, Oklahoma

EDUCATION

University of Oklahoma

Norman, Oklahoma, USA

PhD candidate in School of Computer Science

May 2026 – Present

Master's in Computer Science **GPA: 3.89/4**

Jan 2024 – May 2026

WORK EXPERIENCE

University of Oklahoma

August 2024 – Present

Graduate Research Assistant

Norman, OK

- Conducted research in SLAM, visual odometry, sensor fusion, and autonomous perception, applying pose estimation, coordinate transformations, multi-view geometry, and spatial mapping.
- Performed photogrammetry and 3D digitization (Delaware Nation collections); built 3D reconstruction, and optimized 3D meshes, textures, and point clouds using camera geometry and spatial reasoning.
- Supported research via the Research Help Desk (RHD), including 3D scanning, 3D printing, depth sensing, data pipelines, and interdisciplinary research support.

Indian Institute of Science (IISc)

Jan 2019 - Dec 2023

Research Assistant (AI, Machine Learning Engineer)

Bangalore, India

- Led development of a virtual physics lab and AI assistant using BERT, AllenNLP, and IBM Watson.
- Built ACAVS in Java for DSA, ECDSA, RSA validation, reducing FIPS 140-2 validation time by 90%.
- Managed Linux servers, Git/Bitbucket, and workshops, contributing to a 200% funding increase.
- Mentored intern and coordinated multi-server systems with full-stack engineering leadership.

Indian Academy of Sciences

Jul 2017 - Dec 2018

Full Stack Software Engineer Intern

Bangalore, India

- Developed a cross-platform music player using JavaScript, HTML, CSS, and React for mobile and desktop.
- Implemented Picture-in-Picture (PiP) to enable in-window multitasking and improve interactivity.
- Built an animated navigation system, reducing bounce rate to <30% and doubling session duration.

PROJECTS

SmartTourBot: Autonomous Indoor Guide Robot | *Python, C++, ROS (Melodic), Sensor Fusion, RViz, GMapping, Linux*

- Designed and developed a SMART-TourBot guide, a fully autonomous robot using ROS (Melodic) on TurtleBot 2, featuring a hybrid deliberative-reactive architecture, semantic navigation, and real-robot deployment.
- Built core autonomy modules including SLAM (gmapping), A* path planning, semantic world modeling, path following (P-control), reactive obstacle avoidance, and finite-state machine-based execution.
- Integrated sensor fusion (odometry, depth-to-LaserScan, bumpers), RViz visualization, and audio human-robot interaction, with full ROS Melodic networking, debugging, and system integration.

Autonomous Vehicle JetBot | *Python, PyTorch, ResNet, JetBot, Data Augmentation, Jupyter, Linux*

- Trained a ResNet-based vision model on a JetBot to autonomously follow road lanes in the Minicity environment.
- Built an end-to-end data collection, augmentation, training, and hyperparameter tuning pipeline in PyTorch.
- Improved lane-following performance through targeted data collection at corners and controlled camera alignment.

Automatic Cryptographic Algorithm Validation System (ACAVS) | *Java, MySQL, HTML, CSS, FIPS-140-2*

- Designed and implemented ACAVS for automated validation of DSA, ECDSA, and RSA cryptographic algorithms.
- Reduced FIPS 140-2 validation time by 90% through optimized Java implementations and APIs.
- Deployed and maintained a multi-server Linux infrastructure with version control and testing pipelines.

TECHNICAL SKILLS AND RELEVANT COURSE WORK

Programming: C/C++, Python, C#, Java, JavaScript, SQL, HTML, CSS, Bash, React, Git, Docker, AWS, Claude, Azure

Robotics & Systems: ROS (Melodic), ROS2, SLAM, LiDAR, Sensor Fusion, RViz, Linux, 3D Perception, EKF, Gazebo

Libraries: OpenCV, Scikit-Learn, PyTorch, Keras, TensorFlow, Numpy, Pandas, Matplotlib, Seaborn

Relevant Courses: Intelligent Robotics, Computer Vision for Autonomous Vehicles, AI, DBMS, Data Structure (Large-scale data), NLP, Computer Security, Cryptography, SWE, ML, Algorithms Analysis

LEADERSHIP, GOVERNANCE, AND SERVICES / EXTRACURRICULAR

- Graduate Student Senate: Chair Public Relations Committee August 2024-Present
- Engineering Pathways Program: Mentor August 2025-Present
- Jerry Holmes Leadership Program: Associate August 2025-Present
- Academic Integrity Council: Hearing Committee Member April 2025-Present
- Tau Beta Pi: Engineering Honor Society Member April 2025-Present