Shubhangi Katariyar

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Education

University of Wisconsin – Madison **Sep. 2025 – Dec 2026**
Masters in Electrical & Computer Engineering - Machine Learning & Signal Processing *Madison, WI*

University of Mumbai **Sep. 2018 – May 2022**
Bachelor of Engineering in Electronics & Telecommunications GPA: 3.6/4.0 *Mumbai, India*

Relevant Coursework

- Data Structures
- Big Data Analytics
- Algorithms Analysis
- Database Management
- Artificial Intelligence
- Image Processing
- Computer Vision
- Signals & Systems

Professional Experience

Tata Consultancy Services **June 2022 – August 2025**
AI Engineer *Mumbai, India*

- **Standardized Responsible AI** practices across **20+ enterprise projects** by leading the design and rollout of an ethical assurance platform, now adopted as a **governance framework at TCS**.
- **Reduced ML deployment time by 60%** by automating end-to-end workflows using **CI/CD pipelines** with **Jenkins and Azure DevOps**, covering data ingestion, preprocessing, training, and deployment.
- **Improved model observability by 40%** through the integration of real-time **monitoring, logging**, and a **feedback loop**, enabling continuous learning, drift detection, and version-controlled rollbacks.
- **Increased model explainability by 35%** by developing the **Counterfactual Integration of ALE & LIME**, a hybrid tool combining **global and local explainability** for **tabular data**, improving stakeholder trust and decision transparency.
- **Achieved 86% detection accuracy** and **reduced hallucinations by 21%** in Large Language Models by engineering a **RAG-based pipeline**, enhancing factual grounding in generative outputs.
- **Improved object detection performance by 50%** through calibration of **confidence estimates** using **logistic regression**, increasing reliability in high-stakes vision tasks.
- **Built and deployed a full-stack web application** using **AngularJS, Django**, and **PostgreSQL**, enabling secure **user authentication**, role-based access, and dynamic data handling for 1,000+ active users.

Tata Consultancy Services **March 2022 – May 2022**
NLP Project Intern *Mumbai, India*

- **Achieved 92% classification accuracy** and an **F1 score of 0.89** by developing a **BERT-based model** to categorize **10,000+ patents** using abstract and **CPC data** from the **USPTO API**.
- **Accelerated preprocessing pipeline** for patent text classification by implementing **tokenization**, **stemming**, and **TF-IDF**, enabling scalable feature extraction for deep learning models.

Projects

Sahayak Bot (Demo) | *UR5, MoveIt, ROS, Gazebo, RViz, Spark V, Fire Bird V* **2020**

- **Achieved 95% task success rate** by implementing real-time **pick-and-place automation** on a **UR5 robotic arm** using **MoveIt** in **RViz** and **Gazebo** simulations.
- **Improved path planning efficiency by 30%** through a custom **mapping and navigation** solution, deployed on both **Spark V** and **Fire Bird** mobile robots.

Renal Cell Carcinoma Segmentation & Survival Prediction (IEEE Xplore) | *Python, U-Net, CECT Imaging* **2021**

- **Achieved 84.02% segmentation accuracy**, **0.80 Dice coefficient**, and **0.76 IoU** using a **U-Net architecture** for RCC detection in **CECT images**, enabling precise tumor boundary identification.
- **Published research paper** titled *"Survival Prediction in Renal Cell Carcinoma Patients Using Machine Learning"* in **ICAST 2023 – IEEE Xplore**.

Technical Skills

Programming Languages: Python, C++, Java, R, MySQL, NoSQL, Shell Scripting
Libraries & Frameworks: Pandas, Numpy, Matplotlib, Seaborn, Beautiful Soup, PyTorch, TensorFlow, Scikit-learn, Keras, NLTK, LangChain, OpenAI
Developer Tools & Cloud: Git, Xampp, Postman, Anaconda, GCP, AWS, Azure, Spark, MongoDB, Hadoop, Docker, REST APIs, Tableau