Kumar Anurag

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Introduction

I am a PhD student at the University of New Mexico, working at the intersection of Reservoir Computing and Computer Vision to improve perception and decision-making in autonomous systems. My research combines machine learning, system modeling, and real-time sensor data to develop robust algorithms for human–machine interaction.
This summer, I am also working as a Project Assistant on the 2024–25 Teaching Allocation Grant **(TAG)**, awarded by the Center for Teaching and Learning **(CTL)**. This project involves building the LoboLearn platform—an AI-powered peer learning system for UNM. I believe this hands-on experience with CTL's academic mission and digital learning initiatives has further strengthened my passion for inclusive and innovative pedagogy.

Education

Ph.D. **University of New Mexico**, Mechanical Engineering Department, *Albuquerque, NM, US* — Aug 2024 – May 2029

- Currently pursuing Doctor of Philosophy (Ph.D.) in Controls & Machine Learning
- Optimization and Estimation Lab
- GPA: 3.91/4.0
- **Coursework:** Neural Networks, Dynamic Systems Analysis and Design, etc.

M.Tech. **Birla Institute of Technology and Science, Pilani**, *Rajasthan, India* — Aug 2021 – Dec 2023

- Earned Master of Technology (M.Tech.) degree in Data Science and Engineering
- GPA: 7.78/10.00
- **Coursework:** Data Mining, Big Data Systems, Deep Learning, Stream Processing and Analytics, etc.

B.Tech. **Guru Gobind Singh Indraprastha University**, *Delhi, India* — Aug 2016 – Sep 2020

- Earned Bachelor of Technology (B.Tech.) degree in Computer Science and Engineering
- GPA: 8.77/10.00
- **Coursework:** Applied Mathematics, Applied Physics, Computer Organization and Architecture, Computer Graphics and Multimedia, Data Structures and Algorithms, etc.

Experience

University of New Mexico (UNM), Research Assistant, *Full-time* — New Mexico, USA, Aug 2024 – Present

- Authored a paper titled "RCUKF: Data-Driven Modeling Meets Bayesian Estimation" which got accepted at IFAC MECC 2025.
- Presented a paper titled "Towards Resilient Tracking in Autonomous Vehicles: A Distributionally Robust Input and State Estimation Approach" at IFAC IAV 2025.

Tata Consultancy Services (TCS), Automation Lead, System Administrator, *Full-time* — Hyderabad, India, Oct 2020 – Jul 2024

- Spearheaded multiple projects, including Solarwinds Ticket Analyzer (leveraging Machine Learning), Oracle Database End-to-End Patching Automation, and the SQL DB Password Reset Portal.
- Conducted comprehensive training sessions for both on-site and offshore clients, demonstrating the implementation of AI-powered models, resulting in significant

reductions in manual effort and cost savings for the client.
- Awarded Winner of Info-Security Fest 2023 held at the organization's premises.

CampK12, Coding Instructor, *Part-time* — Remote
Jun 2020 – Jun 2022

- Delivered courses in Python Core, Python Advanced, Virtual Reality (HatchXR), The AI Playground (JS), and MIT App Inventor for Android app development.
- Contributed to curriculum development by designing a new Data Structures course using Python.
- Recognized as Best Performer for receiving the highest parent feedback across multiple demo sessions.

Research Grants

MECC 2025 Student Grant Award, by IFAC Modeling, Estimation and Control Conference (MECC) — Aug 2025

- Selected for the prestigious student grant award by IFAC Modeling, Estimation and Control Conference (MECC) 2025.

Honors & Awards

Star of the Month Award, by TCS — Jul 2024

- Recognized with the Star of the Month award for developing a rapid automation solution for the SQL Accounts DB Password Reset Portal, significantly reducing customer incident volume.
- Certificate link

Kubernetes Badge, by Google — Nov 2023

- Earned the 'Deploy to Kubernetes in Google Cloud' skill badge for successfully demonstrating expertise in deploying applications across hybrid and multi-cloud environments.
- Certificate link

Contextual Master Award, by TCS — Jul 2023

- Recognized as a Contextual Master at TCS for developing end-to-end AI-driven automation solutions that enhanced accuracy, reduced manual effort, and delivered significant client savings.
- Certificate link

Smart India Hackathon Winner, by Government of India — Mar 2018

- Winner of Smart India Hackathon 2018 as part of Team Embers Tech for developing a centralized hospital management system.
- Certificate link

Best Research Paper Award, by GGSIP University — Feb 2018

- Awarded Best Paper for "Effects of Demonetization on Digital Banking" at the National Conference on Demonetization: Demystified, organized by the School of Management, Delhi Technical Campus, GGSIP University.
- Certificate link

Best PPT Presentation, by GGSIP University — Mar 2017

- Secured 1st position in the PPT Presentation event at the Annual Fest "Vikiran" 2017, organized by Delhi Technical Campus, GGSIP University.
- Certificate link

Certificate of Academic Excellence, by GGSIP University — Mar 2017

- Awarded Certificate of Academic Excellence for securing 3rd position at the institute level in the university examination for B.Tech (CSE) during the academic session 2016-17.
- Certificate link

Publications

RCUKF: Data-Driven Modeling Meets Bayesian Estimation, preprint — Jul 2025

K. Anurag, *K. Azizi*, *F. Sorrentino*, *W. Wan*

IFAC Modeling, Estimation and Control Conference (MECC), 2025
arxiv.org/abs/2508.04985

Towards Resilient Tracking in Autonomous Vehicles: A Distributionally Robust Input and State Estimation Approach, preprint — Apr 2025

K. Azizi, *K. Anurag*, *W. Wan*

IFAC Intelligent Autonomous Vehicles (IAV), 2025
arxiv.org/abs/2504.09974

JavaScript Book, Amazon — Nov 2020

K. Anurag
ASIN: B08PDQZ1SF

Python Book, Amazon — Mar 2020

K. Anurag
ASIN: B086BD1CN7

Skills

Languages: C, C++, Python, C#, SQL, JavaScript, PowerShell, Bash

Technologies: .NET, Microsoft SQL Server, XCode, Unity-3D

Soft Skills: Leadership, Problem Solving, Team Player, Communication Skills

Exam Scores

GRE: Scored 328/340 — Oct 2023

Microsoft Technology Associate (MTA) Exam: Scored 95% — Jul 2018

References

Dr. Wenbin Wan, *Assistant Professor, University of New Mexico* — *wwan@unm.edu*

Declaration

- I hereby declare that all the facts mentioned above are accurate, and I take full responsibility for their accuracy.

Kumar Anurag
Albuquerque, Aug 05, 2025