RANJEET ANAND KUMBHAR

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Professional Summary

Software Engineering graduate student with strong foundations in Data Structures, Algorithms, and Machine Learning, with a keen research interest in applying advanced AI/ML techniques to real-world engineering problems. Qualified GATE 2024 (Data Science & AI) with strong problem-solving skills. Effective communicator and team player with a passion for technological innovation.

Education

Thapar Institute of Engineering & Technology, Patiala — ***2024 – 2026***
Master of Engineering in Computer Science and Engineering — CGPA: 9.0/10

Savitribai Phule Pune University, Pune — ***2020 - 2024***
Bachelor of Engineering in Information Technology (Minor: AI/ML) — CGPA: 9.36/10

Research & Publications

- Sensitivity-Driven Deep Learning Model for Tribological Prediction in Al7075/B4C Nanocomposites, Journal submission under review, 2025. (Preprint available)
- Tribo-Informatics Method for Predictive Modeling of Friction and Wear Mechanisms in Al7075/B4C Metal Matrix Composites, Journal submission under review, 2025. (Preprint available)

Work Experience

College Of Military Engineering (Indian Army) — Pune, IN
Research Internship — ***Dec 2022 – Mar 2023***

- Designed and developed a blockchain-based secure file sharing system in a private distributed LAN environment.
- Implemented robust security measures to ensure secure file sharing.
- Secured file sharing platform within a LAN environment.

AWS ML Internship — Virtual Internship
Training Internship — ***Jul 2022 – Sep 2022***
Developed and implemented machine learning models using Amazon Forecast and Amazon Recognition.

Projects

A Deep Learning–Based Controller for Lower-Limb Exoskeleton Assistance (M.E. Thesis - Ongoing)

- Designing an intelligent control framework for lower-limb exoskeletons to assist patients in achieving a stable and natural gait pattern.
- Developing deep learning–based predictive controllers for joint trajectory estimation and assistive torque generation using gait dynamics and sensor feedback.
- Tech Stack: MATLAB/Simulink, Control Systems, Robotics, Artificial Intelligence.

CataractAI: Deep-Learning Based Cataract Prediction System (GitHub)

- Developed a medical AI system leveraging computer vision for fundus image analysis, achieving over 90% accuracy.
- Implemented EfficientNetB0 architecture with transfer learning from ImageNet.
- Tech Stack: Flask, MySQL, TensorFlow, Deep Learning, Computer Vision.

CarPoint: Car Model Recommendation System (GitHub)

- Developed a personalized recommendation engine for automobiles using Random Forest & ANN.
- Enabled users to find their ideal car model based on their preferences and needs.
- Tech Stack: Random Forest, Artificial Neural Network, TensorFlow, Django, Pandas, NumPy, Matplotlib.

Skills & Interests

Technical/Tools: AWS, C, C++, Python, SQL, HTML/CSS, Bootstrap, Django, Git.
Machine Learning: Deep Learning, NLP, Computer Vision, Statistical Analysis.
Libraries: TensorFlow, Hugging Face, OpenCV, Matplotlib, Seaborn, Pandas, Scikit-learn, NumPy.
Interests: Riding Bicycle, Listening to Podcasts, Playing Games, Practicing Meditation.

Certifications & Achievements

- Qualified GATE 2024 in Data Science and Artificial Intelligence
- Solved 200+ Data Structure and Algorithm problems on competitive platforms
- Machine Learning Specialization - Stanford Online and Coursera
- DeepLearning.AI TensorFlow Developer – Coursera