Tarun Singh

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Skills

Languages: C, C++, Python, JavaScript, SQL

Technologies & Tools: Data Structures and Algorithms , Machine learning , Deep Learning , Pandas , numpy , scikit learn . TensorFlow , AWS , Database Management , Problem solving , Mathematics for Machine Learning , Matplotlib

Achievements

- Achieved **World Ranks 202**, **529**, **834**, and **848** in LeetCode Weekly and Biweekly Contests (LeetCode)
- Secured **World Rank 88** among 28,000+ participants in CodeChef Long Challenge (View Result)
- Achieved **All India Rank 26** out of approx. 70,000 candidates in AMU Engineering Entrance Examination, 2015
- Ranked **1 in University** on InterviewBit coding platform (Profile Link)
- Awarded **5-Star** rating in Python and C++ on HackerRank (Profile Link)

Experience

Tech Intern — Moglix *Aug 2024 - Jan 2025*

- Designed and developed responsive email templates for various departments, enhancing internal and external communication effectiveness.
- Created reusable React components to improve front-end maintainability and accelerate development processes.
- Assisted in debugging and refining UI elements, contributing to streamlined application performance.

Publications

Prediction of Dementia using Deep Learning Research Paper *July 2022*

- Developed and deployed a deep learning model using CNN architecture to classify dementia based on brain MRI images, achieving validation accuracy of 96.61%.
- Led data preprocessing and normalization workflow for 6,199 MRI images, ensuring reliable input for robust model training and evaluation.
- Implemented and optimized the training pipeline with early stopping and loss monitoring, successfully preventing overfitting and maximizing predictive performance.
- Converted the trained Keras model to TensorFlow Lite (.tflite) for efficient edge-device deployment, enabling seamless integration into mobile healthcare applications.

Projects

MAP: Charting Student Math Misunderstandings *Ongoing*

- Applied parameter-efficient finetuning (PEFT/LoRA) on large language models (Gemma-2, Qwen-3, DeekSeePMath) for classifying student math responses.
- Leveraged transfer learning with Hugging Face to adapt pretrained models for competition data.
- Trained and evaluated multiple finetuned models, selecting the best based on validation and leaderboard performance.

Cloud Resume Challenge – AWS — Website *2025*

- Designed and deployed a highly available, secure static website on AWS S3, served via CloudFront with HTTPS for improved performance and security.
- Developed a serverless backend using AWS Lambda and DynamoDB, automated deployments with GitHub Actions CI/CD, and implemented IAM role-based access control to secure infrastructure and streamline deployment workflows.

E-Commerce Application *2024*

- Developed a responsive e-commerce UI using React.js and Redux for seamless cart and state management
- Enhanced user experience with optimized search using debouncing and streamlined communication via context API

Education

Monash University, Melbourne *Mar 2025 – Ongoing*
Master of Data Science

Scaler Academy 2023- *2024*
Specialized in Software Development & Problem Solving

CMR Institute of Technology, Bangalore *2018 – 2022*
BE in Computer Science