

Ashish Kulkarni

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Education

PES University

2020 – 2024

Bachelor of Technology in Computer Science and Engineering (CGPA: 8.03 / 10)

Bengaluru, Karnataka, India

- **Relevant Coursework:** Data Structures and Algorithms (C++, Java, Python), Object Oriented Programming (Java), DBMS (MySQL, PostgreSQL), Graph Theory (Graph Neural Networks, Neo4j), AR/VR (Blender, GLUT, Unity), Deep Learning (PyTorch, TensorFlow)
- **Awards:** 3x Distinction Award Recipient

Experience

Nasdaq

Aug 2024 – Present

Software Developer

Bengaluru, Karnataka, India

- Played a key R&D role in a small team jump-starting a new machine intelligence product, an Investor Relations Advisory product under Capital Access Platforms, involving **named entity recognition**, **web scraping**, **AWS**, and **RDBMS (SQL Server and PostgreSQL)**.
- Made several improvements to **fuzzy matching** and added **GenAI summarization**, and took the project to production.
- Designed a **PostgreSQL schema** for backend processes, and re-architected the web scraping solution.
- Worked on **Terraform for AWS** resource provisioning: step functions, batch jobs, lambdas, malware protection, etc.
- **Mentored at an ML bootcamp** for 30+ employees at Nasdaq Bengaluru (2nd week Feb – present).

Nasdaq

Jun 2023 – Jul 2024

Software Development Intern

Bengaluru, Karnataka, India

- Jump-started the new Advisory product as the primary **Python** developer, and took the project to prototype phase.
- **Global finalist** of the 2023 intra-company hackathon by leveraging **LLMs** for **Terraform** script generation.

StanceBeam

Jun 2022 – Aug 2022

Computer Vision Intern

Bengaluru, Karnataka, India

- Implemented the usage of stereo vision to compute the 3D coordinates of a subject, to be used in a future decision review system for cricket.
- **Geometric Techniques:** Epipolar Geometry, Trigonometry
- **Technologies:** OpenCV, NumPy, Python3

Projects

OpenGL Projects | C++, GLUT

- My work ranges from basic 2-d projects, such as generating the Sierpinski triangle fractal using the chaos method, visualizing Graham's scan algorithm, all the way up to implementing elastic sphere collisions in 3-d space.

Glaucoma Diagnosis from Retinal Fundus Images | Python, TensorFlow, scikit-learn

- Using CNNs to classify an image into normal or glaucomatous, using retinal fundus images by transfer learning.

covibot | Python, PRAW

- A Reddit bot which gives COVID-19 stats of a specific region without an explicit call, using low-level NLP, and accessing government datasets.

Graph-based Recommender | Python, NetworkX, DGL (Deep Graph Library), PyTorch

- A recommender system using link prediction algorithms and GCN (graph convolutional networks).

Technical Skills

Languages: Python, C++, Java, C

Concepts: Operating System, Artificial Intelligence, Machine Learning, Neural Networks, Database, Agile Methodology, Cloud Computing, Generative AI, Large Language Models, Computer Vision, Data Science, Computer Networks

Certifications: Principles of Secure Coding, *Udemy*; AWS Educate Introduction to Cloud 101, *Amazon Web Services*; Quantum Computing Using Qiskit, *PESU I/O*; LFD103, *The Linux Foundation*

Teaching

PES University

Teaching Assistant

Jan 2024 – Apr 2024

Bengaluru, Karnataka, India

- Teaching assistant for the 6th-semester course Object-Oriented Analysis and Design with Java (UE21CS352B), under Prof. Priya Badrinath, for 180+ students. Find tasks and other resources on [my GitHub repository](#).

Research Papers

Diffusion Inference with Dynamic Classifier-free Guidance | *IEEE*

- This research work proposes varying the CFG scale values across the inference steps by making use of various scheduling functions, which not only results in better images but also unlocks the full potential of the rich latent space representation of diffusion models by allowing for the sampling of various different images from the same initial conditions by only varying the CFG scale and keeping all other parameters constant.

Test Scores

GRE General Test | 328/340 | Oct 2024

- Quantitative Reasoning: 170/170
- Verbal Reasoning: 158/170
- Analytical Writing: 4.5/6

TOEFL iBT | 118/120 | Sep 2024

- Reading: 29/30
- Listening: 30/30
- Speaking: 29/30
- Writing: 30/30