

ASHISH KULKARNI

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EDUCATION

University of California, Riverside

Master of Science in Computer Science and Engineering

Riverside, CA

Sep 2025 – Dec 2026

PES University

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

Bengaluru, KA, India

Dec 2020 – May 2024

- 3x **Distinction Award** recipient
- Specialization in **Machine Intelligence and Data Science**

EXPERIENCE

Nasdaq

Software Engineer

Bengaluru, KA, India

Jul 2024 – Sep 2025

Software Development Intern

Jun 2023 – Jun 2024

- Jump-started a new ML-based Advisory Technology product as the primary **Python** developer: built a minimum viable product, presented it to product leadership, and took the project to prototype phase.
- Designed, developed, and maintained **microservices** for backend processes, and led the end-to-end **Python** process development—from prototype to production—implementing custom **named entity recognition**, **LLM** integration, fuzzy string-matching, and writing Terraform for **AWS**-powered infrastructure.
- Architected and developed a new web-crawling pipeline using **Selenium WebDriver** and a custom **BFS**-based algorithm, improving mining speed by approximately **5x**.
- **Regional winner** and **global finalist** of the 2023 intra-company hackathon by leveraging **LLMs** for custom **Terraform** script generation.
- **Mentored** at a 6-month **ML bootcamp** for 30+ employees at Nasdaq Bengaluru.

StanceBeam

Computer Vision Intern

Bengaluru, KA, India

Jun 2022 – Aug 2022

- Implemented the usage of **stereo vision** and **epipolar geometry** to compute the 3D coordinates of a subject, to be used in a future decision review system for cricket.
- **Technologies**: OpenCV, NumPy, Python3

PROJECTS

OpenGL Projects | C++, GLUT

This repository contains projects I built while studying the Fundamentals of Augmented and Virtual Reality at PESU, under Dr. Adithya Balasubramanyam. 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

Evaluating popular **CNN** architectures and **histogram equalization**-based preprocessing techniques on classifying a retinal fundus image into normal or glaucomatous. Click to see [our results](#), read [our preprint](#), or see my [GitHub repo](#).

covibot | Python, PRAW

A Reddit bot (Top 5 at a hackathon) which gives COVID-19 stats of a specific region without an explicit call, using low-level NLP, and accessing government datasets. I turned my learnings into a [3-part guide on Analytics Vidhya](#), which you can generally find ranked on the first page of Google search results for *how to make a Reddit bot*.

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

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

Blender Models | Blender

This repository contains Blender models I built while studying the Fundamentals of Augmented and Virtual Reality at PESU, under Dr. Adithya Balasubramanyam.

Image Editor | Python, NumPy, OpenCV, Pillow Image Library

This project contains a command-line interface and a UI-based image manipulation application, including features like **Gaussian blur**, **gamma correction**, etc. I developed this as a deliverable for my Linear Algebra course taught by Dr. Jyothi R.

SKILLS

Languages: Python, C++, Java, C, SQL

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, Graphs

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*

Personal: I love playing and listening to music, anything outdoors from hiking to biking, and traveling.

TEACHING

PES University

Teaching Assistant

Bengaluru, Karnataka, India

Jan 2024 – Apr 2024

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

ARTICLES

A Comprehensive Guide to Creating a Basic Reddit Bot

Analytics Vidhya

Linear Regression Made Simple

Analytics Vidhya

GameStop: What it means to short a stock

The Citadel

RESEARCH PAPERS

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

At the time, most diffusion-based text-to-image generation techniques involved multiple steps of inference, and made use of a constant factor known as classifier-free guidance (CFG) scale throughout the inference process to tune how closely the generation followed the prompt. In this research, my co-authors and I, under the guidance of Dr. Jayashree Rangareddy, created and experimented with dynamic CFG: scheduling the CFG scale over inference steps. We documented our findings in a conference paper.

A Comparative Study on Deep Convolutional Neural Networks and Histogram Equalization Techniques for Glaucoma Detection From Fundus Images | *medRxiv (preprint)*

This research aims to evaluate the employment of various convolutional neural network (CNN) architectures and histogram equalization techniques for glaucoma detection in fundus images. The study utilized the publicly available [ACRIMA database](#), comprised of 705 fundus images (396 glaucomatous and 309 normal).

AWARDS

DAQ: Act as an Owner | *Nasdaq*

For contributions to the Trading Updates beta release, namely AWS architecture design and provisioning using Terraform, Python process development, and integrating with an internal email API.

DAQ: Expand Your Expertise | *Nasdaq*

For significant contributions to the InDi project, expertise in AI/ML, and investing time in learning Terraform.

DAQ: Play as a Team | *Nasdaq*

For mentoring in the 7-month AI/ML Cohort Batch 1 Bootcamp at Nasdaq Bangalore.

DAQ: Play as a Team | *Nasdaq*

Part of the self-managed Advisory ML team handling a new data collection project.

DAQ: Drive Innovation | *Nasdaq*

Regional winner and global finalist of the SEEN global intra-company hackathon, 2023.

TEST SCORES

GRE General Test | *328/340* | *Sep 2024*

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

TOEFL iBT | *118/120* | *Oct 2024*

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