

ANUSHKA AGARWAL

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PROFESSIONAL EXPERIENCE

Columbia Climate School

New York, NY

ML Research Intern

Jan 2025 - Present

- Apply OpenCV-based image pre-processing to enhance segmentation across 1000+ marine microscopy images.
- Build a transfer learning architecture via ResNet-50 leveraging TensorFlow for feature extraction.
- Optimized K-Medoids unsupervised clustering algorithm to identify 20+ distinct marine species with 85% purity score.
- Develop production-ready FastAPI web service to serve ML pipeline through RESTful API endpoints.
- Implement Docker-containerized app on GCP, reducing manual analysis workflow by 80% for end-users.

Threepio

New York, NY

Software Engineer, Founding Team

Sep 2024 - Dec 2024

- Launched a full-stack Django-React web app for subtitle generation, reducing processing time by 75%.
- Engineered a Python based microservice architecture handling 100+ concurrent transcription API requests.
- Programmed JWT authentication and RBAC system in Django REST Framework enabling secure multiple-client access.
- Deployed on AWS EC2 and monitored with CloudWatch, ensuring uptime and alert-driven performance tracking.

Intel

Bangalore, IN

Technical Intern

Jan 2024 - Jun 2024

- Containerized services using Docker and deployed test environments with Kubernetes, speeding regression testing cycles by 45%.
- Integrated automated test execution into CI/CD pipelines utilizing PyTest and Selenium, reducing manual QA time by 70%.
- Enhanced Python APIs for internal Calculation Workbench tool for enterprise workflows to support 100K+ invoice records.
- Delivered 3 production-ready Q2 features in structured Agile sprints while collaborating under 2 senior engineers on code reviews.

PROJECTS

ServeHub

- Developed intuitive marketplace platform with React frontend, implementing dynamic form validation and state management.
- Integrated RESTful Flask APIs for core platform operations, improving user workflow efficiency by 30%.
- Designed a normalized PostgreSQL schema and optimized SQLAlchemy queries, reducing join overhead by 40%.
- Hosted the application on GCP Compute Engine and Cloud SQL for scalable and reliable performance.

URL Shortener

- Built a full-stack URL shortener using FastAPI, React and PostgreSQL with custom link generation and redirection capabilities.
- Containerized backend, frontend and database using Docker Compose for production-ready deployment environments.
- Integrated RESTful APIs and SQLAlchemy ORM for scalable data management and service integration.

Linguistic Bridge

- Trained custom CNN model for ancient script recognition on 200+ unique character classes with data augmentation practices.
- Implemented thresholding and filtering techniques to pre-process 100+ scanned historical images leveraging OpenCV library.
- Tuned model hyperparameters through cross-validation, boosting classification accuracy from 70% to 85%.

SKILLS

- Programming Languages: C/C++, Python, Java, SQL, JavaScript
- ML Libraries: TensorFlow, PyTorch, Keras, Scikit-learn, OpenCV, Pandas, NumPy, Parselmouth
- Frameworks & Tools: GitHub, Flask, Django, FastAPI, Docker, PostgreSQL, AWS (EC2), GCP, Google Colab, JupyterLab
- Specializations: Backend Development, Machine Learning, Deep Learning, Computer Vision, Neural Networks, Model Training

EDUCATION

Columbia University

New York, NY

M.S. Computer Science, Machine Learning Track

Expected Dec 2025

- Coursework: Applied Machine Learning, Computer Vision, Deep Learning, Artificial Intelligence, Databases, Algorithms

R.V. College of Engineering

Bangalore, IN

B.E. Computer Science Engineering

Jun 2024

- Coursework: AI and ML, Artificial Neural Networks, Object Oriented Programming, Data Structures, Software Engineering