

ANANYA ASTHANA

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PROFESSIONAL SUMMARY

Focused and fast-learning Software Engineer with 3.5 years of work experience at Amazon and KPMG, specializing in Fullstack Development, Cloud Security, Automation and Artificial Intelligence, seeking high-impact, high-value, innovative opportunities.

ACADEMIC QUALIFICATION

Northeastern University, Khoury College of Computer Sciences, Boston, MA, USA

September 2023 – December 2025

Master of Science in Computer Science

GPA: 3.85/4.0

Coursework: Programming Design Paradigms, Algorithms, Scalable Distributed Systems, Artificial Intelligence, DBMS, Web Dev, HCI

SRM Institute of Science and Technology, Chennai, India

August 2016 – May 2020

Bachelor of Technology, Computer Science and Engineering

CGPA: 8.51/ 10

TECHNICAL SKILLS AND CERTIFICATIONS

Languages: Python, Java, PowerShell, JavaScript, TypeScript, React.js, Node.js, HTML, CSS, Bootstrap, PHP, C, C++, C#

Database Management Systems: SQL, MySQL, MongoDB, PostgreSQL

Frameworks/ Libraries: FastAPI, Flask, Swing, Zend, OpenCV, LangChain, Pandas, Numpy, PyTorch, Ollama, Scikit, unittest, Boto3

Developer Tools: Git, Docker, Terraform, PowerBI, Prisma, Dynatrace, GitLab, ServiceNow, Jenkins, Kubernetes, Splunk, Latex

Certifications: [AWS Certified Security - Specialty](#), [AWS Certified Cloud Practitioner](#), [Microsoft Azure Fundamentals](#), [AWS Cloud Agnostic Audit Certification](#), Palo Alto Networks System Engineer: Prisma Cloud Associate

WORK EXPERIENCE

Amazon Robotics

July 2024 – December 2024

Software Development Engineer Co-Op

North Reading, MA, USA

- Enhanced the Robotic Movement organization's Java-based AR Resource Management (ARRM) Portal by adding dynamic input support for allocating resources to fulfillment center task plans, modifying API workflows, DAO DTO models, Tomcat server configs, improving portal configurability for robotic drive unit workflows.
- Developed the ARRM Historical Insights Toolkit (ARRM HIT), a reusable framework to automate metric generation from drive unit and fulfillment center data, eliminating manual rescripting, used by 5+ engineering teams to drive feature updates.
- Automated ARRM HIT infrastructure setup programmatically using the TypeScript-based AWS Cloud Development Kit to provision Python Lambda for query execution, Athena for data extraction, S3 for storage, IAM roles for least privilege, CloudWatch for dashboards, and EventBridge for periodic execution. Created modular unit tests and an extensive development guide.

KPMG India

January 2020 – July 2023

Software Development Engineer

Bengaluru, India

- Led the development of a Python Cloud Security Posture Management tool using Flask REST APIs, PowerShell, cloud SDKs (AWS, Azure, GCP), with a MySQL database, deployed for 10+ Fortune 500 clients, saving 200+ hours/month in manual cloud audit effort.
- Developed 13 Java Azure Cloud Audit bots for KPMG's Intelligent Automation Platform, used globally by 8 KPMG member firms to automate cloud control validation, including admin access, password policies, CIS, NIST and CSA CCM baselines.
- Orchestrated cloud pipeline automation using Terraform, Python, PowerShell, and Bash, resolving 120+ IAM, IaC, Lambda tickets, reducing issue resolution time by 50% and cloud operation costs by 15%; containerized the solution using Docker and Az containers.
- Built a scalable PHP Zend-based Third-Party Risk Management solution with MySQL, React.js, reducing evaluation time from 2+ days to 3 hours and improving detection accuracy by 25% using dynamic risk scoring, with visual insights using PowerBI and D3.js.
- Architected a CI/CD pipeline with Jenkins, GitLab, K8s and Splunk for monitoring, saving the effort of 3+ resources weekly.

PROJECTS

Study Buddy: Intelligent Learning Assistant with Q&A | [Github Project Link](#) | [Demo Video](#)

April 2025

Transcribes video/audio lectures using Whisper, summarizes using cosine similarity scoring with NLTK and T5, generates notes via GPT-4o mini, and enables Q&A through a LangChain semantic retriever with FLAN-T5 and Instructor XL embeddings, on Flask and Next.js stack.

Image Classification with Deep Neural Networks | [Github Project Link](#)

April 2025

Built and trained a CNN, two fully-connected networks with ReLU, Tanh activations for CIFAR-10 image classification, using convolutional filters, batch normalization, dropout, Adam optimization, tuning across layer depth, neuron counts, batch size, achieving 80% accuracy rate.

SHEDule: Cycle-aware smart scheduling for balanced living | [Github Project Link](#) | [Demo Video](#)

March 2025

Built with React.js, Node.js, Express.js, and PostgreSQL, integrating Ollama Mistral and Google TTS to schedule work-life-health balanced calendars. Uses a personal AI assistant to recommend alternative tasks based on menstrual cycle phases that affect physiology.

HireU: AI-Powered Hiring and Grant Eligibility Assistant | [Devpost Project Link](#) | [Demo Video](#)

February 2025

'Best use of GenAI' award at CivicHack '25. Created a React.js Frontend, Python FastAPI Backend, MongoDB Database and Ollama LLM server for context-based matching of small businesses with suitable candidates and 60% more eligible Federal and State grants.

PAPER PUBLICATIONS

- [An Enhanced Framework for Visual Attention on Human Face using Artificial Intelligence.](#)
- [Automated Energy Saving System using IoT with PIR Sensors.](#)
- Presented a paper titled 'Diabetes Risk Analysis Using Data Mining and Machine Learning'