

Ayush Goel

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EDUCATION

University of Pennsylvania

Master of Science in Artificial Intelligence | GPA: 3.83

Coursework: Internet & Web Systems, Software Systems, Operating Systems, Full Stack Deep Learning, Machine Learning

Position: Graduate Teaching Assistant for Data Structures, Algorithms and Software Design; and Operating Systems

Philadelphia, PA

May 2024

Thapar Institute of Engineering and Technology

Bachelor of Engineering - Mechatronics Engineering | GPA: 3.89

Punjab, India

June 2018

WORK EXPERIENCE

TDK InvenSense

Engineering Intern

San Jose, California

May 2023 - Dec 2023

- Designed an efficient AWS pipeline combining AWS IoT, ECS, Greengrass, S3, Lambda, CloudFormation, and Elastic Search; coupled with C++ drivers, resulting in a 50% surge in data processing speed, and 30% cost savings.
- Formulated a robust object detection pipeline, attaining a 60% precision while minimizing false positives, and ensured seamless deployments through CI/CD pipelines, in compliance with robust system architecture principles.

Unicommerce eSolutions Pvt. Ltd.

Senior Software Engineer

Gurugram, India

Aug 2019 - July 2022

- Supervised and mentored team of Software Engineers as Team Lead, actively engaging in code reviews to ensure high-quality software development and adherence to best practices.
- Pioneered infrastructure redesign, leveraging residential and datacenter proxies with load distribution and IP-rotation, achieving 25% cost reduction. Introduced self-service optimization tools, notably reducing in support tickets.
- Directed design of a robust large-scale eCommerce platform, overseeing high & low-level changes, spearheading integration with major international marketplaces like Lazada & Shopee; expanding company's footprint to 7 international regions.

Capgemini India Pvt. Ltd.

Senior Software Engineer

Pune, India

Sep 2018 - June 2019

- Spearheaded migration of Malaysia's CIMB Bank's financial web app from SOAP to RESTful APIs and pioneered development of 'Capbook', enterprise social media platform using React and Spring, serving 500+ employees.

SOFTWARE PROJECTS

End-to-End Microservice Architecture: Scalable Integrations and Performance Optimizations

- Architected & deployed end-to-end multithreaded highly-scalable SaaS backend services and systems, facilitating synchronous and asynchronous integrations with diverse logistic, omni-channel & partner systems; boosting system efficiency by 50%.
- Optimized system scalability by integrating a Load Balancer with Round Robin logic, boosting availability, amplifying throughput, reducing downtime, and bolstered system reliability using primary-replica SQL and NoSQL databases.
- Seamlessly integrated CI/CD pipelines for automated microservice deployment across multiple server environments.
- Augmented system performance using distributed cache & employing aspect, event and annotation-driven architectures.
- Onboarded major marketplaces & logistic partners, including Amazon Marketplace & Shipping Provider, Shopify.

ML Ops-Driven System Design: E-commerce Revenue Forecasting & Continuous Deployment

- Operationalized MLOps pipeline for revenue forecasting, utilizing Apache Airflow for workflow management and implementing a state-of-the-art ensemble model (XGBoost and LSTM) on comprehensive historical data from various e-commerce platforms, which led to a remarkable 30% revenue surge.
- Ensured sustained model accuracy by instituting a robust Continuous Integration and Continuous Deployment (CI/CD) framework using Jenkins, implementing seamless adaptation to new data through MLflow for experiment tracking and model versioning, and incorporating Grafana for real-time monitoring and proactive issue resolution.

Event-Driven Microservice Design: Optimizing Event Routing with AWS EventBridge and SQS

- Formulated and launched an event-driven microservice architecture using AWS EventBridge, intercepting and routing events seamlessly from downstream systems to target SQS queues.
- The strategic architectural enhancement led to a 25% reduction in API calls, boosting system efficiency by 30%.
- Incorporated CloudWatch metrics for real-time monitoring of the health and performance of various SQS instances, guaranteeing proactive notifications and rapid responses to critical system events.

Scalable Log Monitoring System: Enhanced Insights with Elasticsearch and Kibana Integration

- Constructed a scalable Elasticsearch logging solution, merging Filebeat at proxy layer, centralizing logs at Logstash, streamlining data processing across multiple clusters, efficiently feeding them to Elasticsearch instances.
- Devised comprehensive Kibana dashboards, offering granular metric visualizations to enhance system observability.
- Leveraged this data-driven approach to achieve a significant 15% reduction in on-call ticket incidents.

SKILLS SUMMARY

Programming: C++, Python, JAVA, Bash, AWS, React, Spring Framework, Elasticsearch, JavaScript, Linux, Android, CUDA
Tools: Git/GitHub, Docker, Jenkins, Kubernetes, CMake, SQL, Maven, MongoDB, Microservices, Valgrind, Kafka, CI/CD, Agile
AI/ML: PyTorch, scikit-learn, pandas, TensorFlow, Tensor-RT, ONNX, MLOps, ROS(1&2), OpenCV