

# AKSHAT KAUSHAL

Masters in Computer Science at University of Pennsylvania, Philadelphia, USA  
[akaush@seas.upenn.edu](mailto:akaush@seas.upenn.edu) · +1 (445) 237 7639 · [LinkedIn](#) · [Github](#) · [Leetcode](#) · [PortfolioSite](#)

## EDUCATION

### University of Pennsylvania

Master of Science in Computer and Information Science (Conc. Artificial Intelligence) **GPA: 3.88/4.0**

Philadelphia, PA, USA

May 2026

**Relevant Coursework:** Advanced Topics in Deep Learning, Computer Vision, Machine Learning, Big Data Analytics, Data Structures

### Thapar Institute of Engineering and Technology

Bachelor of Engineering, Computer Engineering, **GPA: 9.26/10**

Patiala, PB, IN

Jun 2022

## TECHNICAL SKILLS

Programming: Python, SQL, Java, Javascript, C++, Kotlin, React.js

Tools and Frameworks: Pytorch, Scikit Learn, PySpark, JAX, LangGraph, PydanticAI, AWS, Unix/Linux, Git, Docker, CI/CD

Software Engineering: Spring, JavaScript, HTML, CSS, Selenium, Jest, JUnit, MLOps, Splunk, Armada, Prometheus, Grafana

## WORK EXPERIENCE

### Adobe | Software Engineering Intern

San Jose, CA, USA | May 2025 - Aug 2025

- Created Graph of Thought algorithms for Agentic-AI Journey Graph generation, enabling marketers to translate natural-language into personalized Digital Experience campaigns with integrated guardrails via A2A and MCP protocols, LangGraph and Pydantic AI.
- Developed intent matching, scoring, and terminology-expansions tailored to Graph-of-Thought models, leveraging FastAPI to inject business context and activate AI workflows through reasoning engine, enhancing Journey Graph scoring and relevance by 34%.

### University of Pennsylvania | Researcher- Predictive Intelligence Lab

Philadelphia, TG, IN | Jan 2022 - May 2024

- Single-handedly developed a **JAX implementation** of Microsoft's **1.3B Aurora** Earth model, converting massive PyTorch weights and code into a **GPU-optimized** with **mixed-precision training, checkpointing, and kernel fusion** for efficient model training.
- Engineered parameter-efficient fine-tuning pipelines with **LoRA integration** and **multi-step autoregressive training**, managing terabytes of ECMWF data through **hybrid PyTorch-JAX dataloaders** while reducing memory footprint by 40%.

### Salesforce | Member of Technical Staff

Hyderabad, TG, IN | Jul 2022 - Jul 2024

- Contributed to building Next-Gen Personalization Platforms by designing type system databases, CRUD, validation layers, and data mapping with **Data Cloud**, handling **200K events per second**, leading to **40%+ adoption** and enhanced personalized experiences.
- Researched and devised mechanisms to track adoption metrics for new products in the Experience Cloud, integrating **unsupported type systems** through validation layer **instrumentation** and cross-referencing with Salesforce **Unified Data Dictionary**.
- Implemented performance tests using **EKG and Armada frameworks**, providing critical insights into optimizing client-side caching, improving code change efficiency, and detecting slow processes, resulting in a **24% increase in overall product performance**.

### Oyo Rooms | Data Science Intern

Gurugram, HR, IN | Jan 2022 - Jun 2022

- Productionized MLOps pipelines using **PySpark, AWS, and CatBoost** for booking prediction, processing 6M+ data points. Improved view-to-stay conversion by **8%** through calibrated classifiers, feature importance analysis, and **personalized payment optimization**.
- Designed complex data extraction workflows using **SQL, Hive, and PyHive** from OYO's **Metabase Infrastructure**. Applied hyperparameter tuning, **advanced data augmentation**, and Platt scaling calibration using Python, Scikit-learn, and MLOps.

### Thapar University | Research Intern

Patiala, PB, IN | Mar 2021 - Aug 2021

- Implemented a brain tumor segmentation and survival prediction framework for **4D-MRI voxels of the BraTS20 dataset** on NVIDIA DGX, securing **32nd place achieving a 2.7% performance improvement** over existing models through optimized architecture.
- Proposed an ensemble model with 3D U shaped fully convolutional and pre-trained 2D residual networks, enhancing feature extraction using AWS S3 for efficient data handling, outperforming traditional models with a **15% reduction in training time**.

## PERSONAL PROJECTS

### Distributed Deep Learning Network for 3-Dimensional Mapping

Philadelphia, PA, USA | Oct 2024 - Dec 2024

- Introduced a neural network training inspired by the DiNNO framework, developing advanced **CADMM-based** optimization techniques and **weight-averaging consensus methods** to balance local and global model learning objectives effectively.
- Evaluated implementations on MNIST and 2D mapping tasks, **extending to 3D scenarios** while systematically tackling challenges in scalability, convergence, communication efficiency, and distributed training system implementation complexities.

### Vision Based Auto Zooming Cameraman [Github Link](#)

Philadelphia, PA, USA | Sep 2024 - Dec 2024

- Engineered an AI-powered autonomous camera system that adjusts zoom and focus in real-time for sports recording using a YOLOv11 model for object detection, Gaussian blur operations for heatmap generation, and temporal smoothing algorithms.
- Designed and integrated advanced post-game analysis features, including automated player clustering, team movement heatmaps, ball possession analysis, and frame-wise action visualization through an interactive dashboard to match statistics and gameplay dynamics.

## PUBLICATIONS

Singhal, K., Sood, K., Kaushal, A., Gehlot, V., Rana, P.S. (2024). Analysis of Effectiveness of Indian Political Campaigns on Twitter. [https://doi.org/10.1007/978-3-031-56700-1\\_17](https://doi.org/10.1007/978-3-031-56700-1_17)