

# Nikhil Mandayam Adyapak

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Seeking 2026 Summer Internships/Fall Co-ops in ML, MLOps, Data Science Internships

## EDUCATION

### University of Wisconsin-Madison

Sep 2025 - May 2027

Masters in Data Science

GPA - 3.65/4.00

**Coursework:** Machine Learning, Foundation Models, Database Design & Implementation, Statistical Models, Statistical Methods, Statistical Inference for Data Science | **Teaching Assistantship:** CS564 Database Management Systems

### PES University - Bengaluru, India

Aug 2019 - May 2023

Bachelor of Technology in Computer Science & Engineering

GPA - 3.78/4.00

**Specialization:** Machine Intelligence & Data Science | **Awards:** MRD Scholarship (Top 20% of 1100+ students)

**Coursework:** Algorithms, Data Structures, Data Science, Linear Algebra, Machine Learning, Big Data, Cloud Computing

**Teaching Assistantship:** CS203 Statistics for Data Science

## WORK EXPERIENCE

### Bosch Global Software Technologies (BGSW)

Bengaluru, India

Senior Software Engineer – AI Systems for Advance Driver Assisted Systems (ADAS)

Aug 2023 – Aug 2025

MLOps (ML in Operations) & Distributed Cloud Workflows

- Delivered **MLOps platform** for pedestrian detection (**Azure ML Studio + MLFlow**) with end-to-end **ML lifecycle**; enabled **multi-GPU training (3x faster)** and cut GPU costs by **60%**.
- Designed and scaled a **Ray Cluster** based distributed **ML training** system on **Azure Kubernetes Service (AKS)**, reducing retraining cycles from **4 weeks** to **1 week (75% faster)** and supporting **30+** teams.
- Deployed an on-prem **Ollama LLM** with a Python FastAPI wrapper, enabling private, team-wide LLM access (**150+** users) with zero external data egress.

Large-Scale Image Retrieval & Dataset Generation for Autonomous Driving

- Developed a **60M+ image-search engine** using **CLIP embeddings + ElasticSearch**, enabling edge-case retrieval and cutting reviewer triage from **4 hours** to **10 minutes (95% efficiency gain)**.
- Engineered **scene-understanding** image retrieval pipeline for **fine-grained dataset** generation: scene graphs (**hugging face transformers + ensemble of foundation models**) improving corner-cases for complex driving scenarios.

Embedding Reuse & Cost Optimization

- Integrated **CLIP embedding** re-use with **80%** cross-version alignment, avoiding full re-indexing of legacy image vectors.
- Applied **image-complexity estimation** for **cost-aware labeling**, cutting annotation effort and labeling costs by **30%**.
- Streamlined **ML pipeline** provisioning on **AKS (Terraform, Helm, GitHub Actions, Argo)** for **multi-tenant** ADAS teams; integrated Prometheus monitoring/alerting, and reduced experiment setup from **3 days** to **5 minutes (99% efficiency gain)** for **30+** teams.

### Machine Learning Operations (MLOps) Intern

Jan 2023 – May 2023 | Jun 2022 – Jul 2022

- Built on-premise **MLOps** pipeline (**DVC + MLflow**), reducing model setup time from **1 Week** to **1 Day, 85% faster**.
- Accelerated **multi-GPU** training for YOLOv5 and Detectron2 on **Azure ML Studio**, reducing training time by **67%**.

## TECHNICAL SKILLS

**Programming languages:** Python, C, C++, Java, SQL, R

**ML & Statistics:** PyTorch, TensorFlow, HuggingFace, Transformers, LLM, CNN, GAN, scikit-learn, OpenCV, matplotlib

**MLOps & Workflows:** Ray, MLFlow, DVC, Argo Workflows, Azure ML Studio, Prometheus, Grafana

**Cloud:** Azure, AWS, AKS, Docker, Terraform, Azure DevOps, GitHub Actions, Linux

**Databases & Tools:** ElasticSearch, PostgreSQL, MySQL, MongoDB, FastAPI, Flask, Streamlit, GitHub

## PROJECTS AND PUBLICATIONS

[1] **Code Runtime Complexity Prediction** - ERCICA (Springer), 2023 | Python, TensorFlow, sklearn, Streamlit, NetworkX  
Predicted Big-O runtime complexity of C/Java/Python code using static analysis and ML classification with BiLSTM over Abstract Syntax Trees graph embeddings on IBM CodeNet dataset (**Accuracy: 96%**). [\[View Publication\]](#)

[2] **MLOps POC pipeline for Pedestrian Detection** - 2023 | Python, DVC, MLFlow, DAG, Streamlit, SQLite, PyTorch  
Implemented on-premise MLOps starter template with DVC + Detectron2 for end-to-end ML lifecycle. [\[View Project\]](#)

[3] **Novel ways of decrypting transposition ciphers**, - IEEE smartgencon, 2022 | Python, Optimization, Natural Language  
Introduced cipher-breaking optimization techniques over columnar transposition ciphers. [\[View Publication\]](#)

## AWARDS AND SERVICES

**Top Achiever Award & Best Presenter Award:** BGSW, 2024, Data Engineering Unit: Ranked **1st** among **150+** engineers

**Volunteer:** BGSW, 2023-2025, Trained people with disabilities (Youth4Jobs) and taught CS to underprivileged students.

**Teaching Assistant:** PES University, 2022, Mentored **120+** students in Data Science and served as a panelist in a hackathon.