Uzair Akbar

Phone: (404) 203-9260
Webpage: uzairakbar.com
Email: uzair.akbar@gatech.edu

Education

M.Sc. Computer Science @ *Georgia Institute of Technology* **GPA:** 3.78 / 4.0 | **Dec. 2025**

M.Sc. Communications Eng. @ *Technical University of Munich*, Germany **GPA:** 3.65 / 4.0 | **June 2021**

B.Sc. Electrical Eng. @ *National University of Sciences & Technology*, Pakistan **GPA:** 3.59 / 4.0 | **June 2017**

Selected Publications (Google Scholar)

†**U. Akbar** *et al.* "Symmetry-Informed Causal Partial Identification." *arXiv:2610.09230*, 2026. **(preprint)**

†**U. Akbar** *et al.* "An Analysis of Causal Effect Estimation using Outcome Invariant Data Augmentation." *Advances in Neural Information Processing Systems (NeurIPS)*, 2025. **(spotlight; top 3%)**

A. Savkin, T. Lapotre, K. Strauss, **U. Akbar** & F. Tombari, "Adversarial Appearance Learning in Augmented Cityscapes for Pedestrian Recognition in Autonomous Driving." *ICRA*, 2020.

Professional Experience (LinkedIn)

Causal ML Research† @ *Georgia Tech* (w/ B. Dai), USA **Aug. '24—Present**

Software Engineer Intern @ *Hewlett Packard Enterprise*, USA **June '24—Aug. '24**

- Built CI/CD pipeline (`python`+`jenkins`+`JFrog`) to test/build/release/rollback VM templates for QA workloads.
- Integrated pipeline with dynamic KVM provisioning platform (`k8s`+`KubeVirt`) for scalable env. management.

Software Engineer @ *OMMAX*, Germany **Nov. '22—June '23**

- Designed end-to-end Salesforce ETL pipeline (`Airflow` + `PostgreSQL`), improving data throughput by 58% (by refactoring `python`→`postgres`) and sales lead identification by 63% (by reducing data redundancy & duplicates).
- Built a serverless `FastAPI` microservice on AWS Lambda (`docker`) for `XGBoost`-based ticket classification and RegEx error code extraction. Served endpoints to a CRM platform to automate ticket routing and categorization.

Data Scientist @ *Auto1 Group*, Germany **June '22—Oct. '22**

- Engineered `LightGBM` predictor for car refurbishment costs; €160 MAE decrease (∼27.5% improvement) vs. prod.
- Automated training and eval. workflows; data extraction/transformation (Redshift) & model checkpointing (S3).

ML Research Intern @ *Max Planck Institute for Intelligent Systems* (w/ K. Muandet) **Apr. '20—Feb. '21**

- Master's thesis (TU Munich) on observational causal inference using data-augmentation + instrumental variables.

Teaching Experience

Teaching Assistant (Reinforcement Learning CS8803, CS7642) @ *Georgia Tech*, USA **Aug. '24—Present**

- Authored RL projects for ∼300 students/semester, including a `python` package for local DeepRacer deployment.
- Built a containerized simulation service with multi-runtime support (`docker` (`compose`) + `podman` + `apptainer`).
- Developed a client-side `gymnasium` wrapper to interface with the simulation service using `ZeroMQ` sockets.

Teaching Assistant (Approx. Dynamic Programming EI7649) @ *TU Munich*, Germany **Oct. '19—Mar. '20**

- Held weekly tutorials discussing problem-set solutions, graded assignments, and mentored student group projects.

Tech. Stack (GitHub)

Languages: `Python`, `C++`, `SQL`, `Bash`
Testing & CI/CD: `Jenkins`, `JFrog`, `Git`
Cloud: `AWS` (EC2, Lambda, S3, RDS, Redshift)
Data & Backend: `PostgreSQL`, `Airflow`, `Redis`, `FastAPI`
Systems & Orchestration: `Docker`, `Linux`, `RabbitMQ`, `K8s`
ML: `PyTorch`, `TensorFlow`, `sk-learn`, `Gymnasium`, `Llama2`

Misc. Projects

Shallower LLMs for faster inference (pretrained on A100 80 GB)

- Cut sequential operations; fewer transformer blocks + nonlinear attention heads → −7.5% `LLaMA2` model latency.
- Built eval. pipeline for generation: BLEU/ROUGE scoring + latency on OOD sets (HH-RLHF, WikiQA).

Reviewing

NeurIPS '26 UniReps @ NeurIPS '26 RoboLetics @ CoRL '26 RoboLetics @ ICRA '25