RISHABH JAIN

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EDUCATION

Columbia University   Aug 2025 - Dec 2026
Master of Science (MS) Computer Science (Machine Learning)   *New York, NY*
- Machine Learning, High Performance ML, Natural Language Processing, Computational Aspects of Robotics

Indian Institute of Technology (IIT) Ropar   Jul 2019 - May 2023
B.Tech (Honors) Computer Science and Engineering with Concentration in AI   *Ropar, IND*
- Sole recipient of BTech Honors in 2023 | AI Conc: Deep Computer Vision, Reinforcement Learning, Federated Learning

TECHNICAL SKILLS

Languages: C, C++, Python, Java   **Math&AI**: Numpy, Pandas, OpenCV, PyTorch, Gymnasium, Mujoco
Tools: Git, Perforce, Linux, Docker, Android SDK   **Database&Backend**: PostgreSQL, PostGIS, Flask, FastAPI

RESEARCH WORK

NFR Benchmarking Framework in IBM ITBench for Agentic AI   Oct 2025 - ongoing
PyTorch, ITBench, Agentic LLMs   *IBM Research, Columbia University*
- Developing a non-functional requirements benchmarking framework as an extension of IBM ITBench to measure operational metrics of IT automation Agents beyond accuracy
- Working towards instrumenting ITBench scenarios and novel metrics to ensure satisfaction of NFRs and allow qualitative analysis and ranking

Video Transformer Based Multi-view Body Language and Behaviour Recognition   May 2023 - Oct 2023
Python, PyTorch, Deep Learning, Computer Vision   *Monash University & IIT Ropar*
- Publication: MAGIC-TBR: Multi-view Attention Fusion for Transformer based Bodily Behavior Recognition in Group Settings; ACM MultiMedia, 2023
- Publication: Multi-view Attention Fusion for Explainable Body Language Behavior Recognition; IEEE TAFFC
- Built a multi-view feature-fusion pipeline with a finetuned VideoSwin transformer backbone for multi-label task
- Placed 2nd in the ACM MultiMedia 2023 Bodily Behaviour Recognition Grand Challenge | certificate

Spatio-Temporal Hotspot Detection in Microsoft Azure | BTech Capstone   Aug 2022 - Nov 2023
Java, Python, PostgreSQL, PostGIS   *Microsoft & IIT Ropar*
- Formulated a statistical framework to identify spatio-temporal hotspots in **Microsoft Azure** from network autonomous system data from 10+ Indian cities stored in a spatial PostGIS database. Contributed to implementation of algorithms and database CRUD, creation of synthetic data, and testing on Microsoft's proprietary dataset
- Publication: Periodic Spatio-Temporal Colored Hotspot Detection in Azure Traffic Data; ACIIDS 2025

PROFESSIONAL EXPERIENCE

Software Engineer, Arista Networks   Jul 2023 - Jun 2025
C, C++, Python, Docker, Software Defined Networking   *Bengaluru, India*
- Contributed to early stage feature development in control and data plane of the Multi-Domain Segmentation Service. Designed essential TACC constructs and Sysdb agents in 4 new repositories by analyzing future feature requirements
- Enhanced EOS Software Forwarding Engine features, throughput and performance across 16 core repositories
- Promoted to EngProd team in January 2025. Proposed and led development of a new auto-build tool to streamline workflows of 15+ teams at Arista during a company-wide version control transition. Tool bundles external AlmaLinux package dependencies in Arista EOS by resolving dependency graph across all of Arista RPMs

Edison AI Intern, General Electric Healthcare   May 2022 - Jul 2022
Python, PyTorch, FastAPI, PostgreSQL, Docker   *Bengaluru, India*
- Created a real-time computer vision based autonomous patient monitoring pipeline in Edison Digital Health Platform
- Developed a lightweight YOLOv5 model through ablation. Fine-tuned it on open-source and over 30,000 self-annotated images. Deployed it through containerized APIs using FastAPI backend and PostgreSQL database

PROJECTS

RFDN Variants: Efficient Image Super-Resolution | NTIRE CVPR Challenge   Feb 2023 - Apr 2023
PyTorch, Computer Vision | document   *LASII Lab, IIT Ropar*
- Created deep learning based efficient image super-resolution model variants of the provided RFDN baseline
- Achieved a superior PSNR on the DIV2K dataset along with a reduced model inference time

Client Selection in Deep Federated Recommender Systems   Oct 2022 - Mar 2023
PyTorch, Federated Learning | document   *Game Theory Lab, IIT Ropar*
- Studied client subset selection strategies to optimize training cost in deep learning based federated recommender systems
- Evaluated these strategies over collaborative filtering based recommender systems on MovieLens datasets