Yash Bhisikar

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EDUCATION

BITS Pilani, B.E.(Hons) Computer Science, Minor in Data Science 10/2021 – 06/2025
- **CGPA: 9.32**; **Minor GPA: 9.8/10**; received **Merit Scholarship** (**top 2%** of 785 students) for 6 semesters for excellent academic performance
- Relevant Coursework: Machine Learning, Reinforcement Learning, Artificial Intelligence, Applied Statistical Methods, Foundations of Data Science, Distributed Systems, Operating Systems, Computer Networks, Computer Architecture, Data Structures & Algorithms

EXPERIENCE

e6data, Performance and Research Engineering Intern 01/2025 – 06/2025
- Revamping the engine's **string representation** to **Umbra-styled strings** in **Java**, incorporating **SSO from C++** & **columnar memory layouts**
- Optimized **table scan filters** via vector reuse & short-circuiting evaluation, reducing memory allocations & time taken for query filters **by 12%**

Technische Universität Dresden, DAAD Wise Scholar | Supervisor: Dr. David Kappel 05/2024 – 01/2025
- Developed a **new parametrization for Mamba SSM** to encode sparse geometric information from point-clouds and event-streams
- Modified the **original Mamba C++/CUDA kernels**, ported PointMamba to **JAX**, and presented our work at IndoML'24
- Achieved **SOTA** results on DVS-Gesture, and improved performance by **~2%** over all vanilla Mamba-based models on point-cloud benchmarks

SenseLab, Research Assistant | Supervisor: Dr. Sougata Sen 08/2024 – present
- Extending the PopSign app for **real-time Indian Sign Language (ISL) detection** to classify gesture sequences directly on-device.
- Extracted frame-wise hand landmarks using MediaPipe and adapted a lighweight **ST-GCN** for feature extraction and classification.

APPCAIR, Student Researcher | Supervisor: Dr. Snehanshu Saha 05/2023 – 12/2023
- **Pruned neural networks** post-training using **Granger Causality** to model relationship of weight fluctuations and loss across epochs. Code
- Evaluated impact on **feature importances using SHAP**, with a comparative analysis against L0, L1, rank-based, and LC-Algorithm approaches

Data, Systems and HPC Lab, Research Assistant | Supervisor: Dr. Arnab Paul 03/2023 – present
- Designing and implementing an cluster-aware **file-level adaptive striping framework** for BeeGFS parallel file system
- Incorporating historical traces from **Darshan** logs**,** a **syscall intercepter** for real-time tuning and system benchmarks using **IOR**
- **Deployed and maintained** a 40-node cluster consisting of rack servers, GPU workstations and Raspberry Pi's

North Eastern Space Applications Centre, Summer Intern 05/2023 – 08/2023
- Developed spatio-temporal **rainfall prediction models** using **UNets and LSTMs** on the ERA5 Land Reanalysis dataset. Report
- Investigated **Genetic Algorithms** as an alternative to gradient descent. **Abstract** accepted at EGU General Assembly

PREPRINTS AND PUBLICATIONS

STREAM: A Universal State-Space Model for Sparse Geometric Data, Arxiv 2024 | Under Review at BMVC'25
Mark Schöne*, **Yash Bhisikar***, Karan Bania*, Khaleelulla Khan Nazeer, Christian Mayr, Anand Subramoney, David Kappel (* - Equal Contribution)

SandDune: Single Antenna Device for Detecting User's Natural Eating Habits, IEEE Percom 2025, Runner-up for Best Paper in WiP track
Shreyans Jain, **Yash Bhisikar**, Surjya Ghosh, Timothy Pierson, Sougata Sen

Does Varying BeeGFS Configuration Affect the I/O Performance of HPC Workloads?, REX-IO Workshop, IEEE Cluster 2023
Arnav Borkar, Joel Tony, Hari Vamsi K. N, Tushar Barman, **Yash Bhisikar**, Sreenath T. M., Arnab K. Paul

CountCLIP - [Re] Teaching CLIP to Count to Ten, Arxiv 2024 | Under Review at ReScience C
Harshvardhan Mestha, Tejas Agarwal, Karan Bania, Shreyas V, **Yash Bhisikar**

SELECTED PROJECTS

Project Kratos, Software Team Member for the Mars Rover 06/2023 – 02/2024
- Developed a monocular **visual servoing system** for autonomous navigation using a custom trained **YOLOv3** for object detection
- Implemented a **PID-controlled GPS navigation system**, enabling precise rover traversal between local coordinates.

Grasping Graphormer: Assessing Transformer Performance for Graph Representation, Blogpost-Tutorial Track, GRAM Workshop @ ICML 2024 06/2024
- Collaborated on a deep-dive blogpost explaining the core principles behind the **Graphormer** architecture from the paper "Do Transformers Really Perform Bad for Graph Representation "

Reinforcement Learning Via Sequence Modeling 06/2023
- Adapted the Decision Transformer architecture by integrating an LSTM, evaluating against model-free baselines in **Mujoco's Hopper**
- Conditioned the model with **sequential reward, state, and action tokens** to predict future rewards and actions in an offline RL setting.

SKILLS

Languages: Python, C, C++, Java | **Frameworks:** PyTorch, JAX, Tensorflow, NumPy, Matplotlib, Polars/Pandas, OpenCV, PyGad, ROS

AWARDS

DAAD-Wise Fellowship 2024, 1 of the 235 undergraduates selected for the programme. Hosted at TU Dresden

MITACS Globalink Scholarship 2024, Selected for research internship at Université Laval, among over 30,000 applicants for the programme

Google DeepMind Research Symposium, One of the 150 undergrads selected to attend the offline conference at Google Office in Bangalore

Amazon Scholar for the Graduate Forum at IndoML'24, One of the 6 people selected from BITS Goa