

# Yash Bhisikar

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## EDUCATION

### BITS Pilani,

Bachelor of Engineering in Computer Science (Hons), Minor in Data Science

08/2021 – 07/2025

- CGPA: 9.41; Minor GPA: 9.8/10; Coursework: Reinforcement Learning, Machine Learning, Applied Statistical Methods, AI, Linear Algebra

## PREPRINTS AND PUBLICATIONS

### Learning what to say and how precisely: Efficient Communication via Differentiable Discrete Communication Learning, [Paper Link](#)

Previously submitted to ICLR '26 - Aditya Kapoor, **Yash Bhisikar**, Benjamin Freed, Jan Peters, Mingfei Sun

### STREAM: A Universal State-Space Model for Sparse Geometric Data, NeVI Workshop @ ICCV'25, [Paper Link](#)

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, [Paper Link](#)

Runner-up for Best Paper in WiP track ([Certificate](#)). Shreyans Jain, **Yash Bhisikar**, Surjya Ghosh, Timothy Pierson, Sougata Sen

### CountCLIP - [Re] Teaching CLIP to Count to Ten, Under review at ReScience C (Reproducibility Journal), [Paper Link](#)

Harshvardhan Mestha, Tejas Agarwal, Karan Bania, Shreyas V, **Yash Bhisikar**

## EXPERIENCE

### e6data, Performance and Research Engineer

Present | Bangalore, India

- Implemented [prefix-coded strings](#) in query engine, optimizing columnar memory layout to reduce **object overhead** and **cache misses**
- Designed a custom serialization protocol for strings, reduced wire payload size by 40%, boosted throughput 10x, and eliminated shuffle OOMs.
- Developed a **query compilation layer** in **Rust** that lowers e6data's custom **Calcite** logical plans into **Apache DataFusion's** physical plans

### University of Manchester, Research Intern | [Code](#)

Remote

- Developed a Multi-Agent RL comms framework allowing backpropagation through discrete, unbounded channels via **stochastic quantization**
- Derived a **differentiable loss function** that minimizes bit-length, enabling agents to learn **adaptive, variable-precision** comms protocols.
- Engineered a **plug-and-play** layer that reduced communication bandwidth by **1-3 orders of magnitude** across 4 SOTA algorithms (IC3Net, TarMAC, GA-Comm, MAGIC) while matching or exceeding task performance (e.g **+467% success** in Google Research Football).

### Technische Universität Dresden, DAAD-WISE Fellow & Research Intern | [Code](#)

Dresden, Germany

- Developed a **novel parametrization for Mamba** to encode sparse geometric data from point-clouds, enabling **efficient sequence modelling**
- 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 vanilla Mamba-based models on ModelNet40/ScanObjectNN

### APP Centre for AI Research, Student Researcher | [Code](#)

Goa, India

- **Pruned neural networks** post-training using **Granger Causality** to model relationship of weight fluctuations and loss across epochs.
- Evaluated impact on **feature importances using SHAP**, with a comparative analysis against L0, L1, rank-based, and LC-Algorithm approaches for **model compression efficiency**.

## PROJECTS

### Grasping Graphomer: Assessing Transformer Performance for Graph Representation,

Blogpost-Tutorial Track, [GRAM Workshop @ ICML 2024](#)

- Co-authored a deep dive of Graphomer architecture, detailing spatial/centrality/edge encoding mechanisms and showing how **transformer attention with learnable bias terms** can subsume GCN/GraphSAGE/GIN as special cases

### Indian Sign Language Recognition using Graph Neural Networks, [Code](#)

- Replaced heavy CNN encoders with a lightweight **Spatio-Temporal Graph Convolutional Network** to work on resource-constrained devices
- Created a **dockerized** training environment, achieved **~75% test accuracy** on 263 classes of INCLUDE dataset using lesser trainable params

### University Rover Team, Software Team Member

- 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 nearby local coordinates

### Dynamic File Striping Configuration for HPC Storage, [Report](#)

- Implemented a cluster-aware **file-level adaptive striping framework** for parallel file systems at HPC clusters @ [DashLab](#), BITS Goa
- Developed a syscall interceptor & using Darshan logs to **automate file-level striping** based on **access patterns** derived from IOR benchmarks

## SKILLS

**Languages:** Python, Rust, Java, C++, SQL, Bash, LATEX | **Softwares/Libraries:** JAX, TensorFlow, Keras, Flax, PyTorch, NumPy, Pandas, scikit-learn, W&B, Docker

## AWARDS AND ACHIEVEMENTS

**DAAD-Wise Fellowship 2024**, One of 235 fellows selected from India to carry out fully funded research at TU Dresden, Germany. [Certificate](#)

**MITACS Globalink Scholarship 2024**, Selected for a fully funded research at Université Laval, among over 30,000 applicants. [Certificate](#)

**Merit Scholarship**, Awarded by the University for excellent academic performance (top 2% in a batch of 735 students) for 6 semesters

**Joint Entrance Examination (JEE)**, Advanced: AIR 1938 among 1 Lakh applicants, Mains: AIR 935 among 9 Lakh applicants