Yash Bhisikar

🔗 Website   ✉ yashbhisikar24@gmail.com   📍 Nagpur, India   ⦿ yashrb24   in Yash Bhisikar

EDUCATION

B.E.(Hons) Computer Science, Minor in Data Science   Oct 2021 – Jun 2025 | Sancoale, Goa
BITS Pilani
- **CGPA**: 9.23, Recipient of **Merit Scholarship** by the university for excellent academic performance (top 3% in batch)
- DS Courses: Machine Learning, Reinforcement Learning, Artificial Intelligence, Applied Statistical Methods, Foundations of Data Science
- CS Courses: Distributed Systems, Operating Systems, Computer Networks, Database Systems, Data Structures & Algos

EXPERIENCE

Technische Universität Dresden ⊡   May 2024 – present | Dresden, Germany
Research Intern
- Working with **Prof. David Kappel** ⊡ and **Prof. Anand Subramoney** ⊡ on state-space models
- Modified the discretization of **Mamba SSM** to adapt to neuromorphic streams and point-cloud data
- Achieved **competitive results** across datasets and improvement over Mamba baselines, paper submitted to a double-blind conference

Anuradha and Prashanth Palakurthi Centre for Artificial Intelligence   May 2023 – Dec 2023 | Sancoale, Goa
Research (APPCAIR) ⊡
Undergraduate Researcher
- Working on **causal pruning** under the supervision of **Prof. Snehanshu Saha** ⊡ **,** in collaboration with **Wadhwani AI** ⊡
- Designing a **non-chaotic pruning strategy** for neural networks that also preserves feature importances
- Investigating **Granger Causality** ⊡ and comparing against L0, L1 and Rank-based methods

Data, Systems and High-Performance Computing Lab ⊡   Mar 2023 – present | Sancoale, Goa
Undergraduate Researcher
- Working under **Prof. Arnab K. Paul** ⊡ on **parallel file systems** and **high performance computing**
- Designing an cluster-aware **file-level adaptive striping framework** for parallel file-systems, incorporating historical traces from **Darshan** and system-wide benchmarks
- **Deployed and maintained** a 32-node cluster consisting of rack servers, desktop workstations and Raspberry Pi's

North Eastern Space Applications Centre ⊡   May 2023 – Aug 2023 | Umiam, Meghalaya
Summer Intern
- Experimented with different architectures for **rainfall prediction** from weather data - **UNet** for spatial feature extraction and **LSTMs** for temporality modelling
- Conducted experiments combining **genetic algorithms** and **gradient-descent based optimizers** to improve accuracy

PUBLICATIONS

STREAM: A Universal State-Space Model for Sparse Geometric Data ⊡
Arxiv 2024
Mark Schöne*, **Yash Bhisikar***, Karan Bania*, Khaleelulla Khan Nazeer, Christian Mayr, Anand Subramoney, David Kappel

Does Varying BeeGFS Configuration Affect the I/O Performance of HPC Workloads? ⊡
Re-envisioning Extreme-Scale I/O for Emerging Hybrid HPC Workloads (REX-IO), IEEE Cluster 2023
Arnav Borkar, Joel Tony , Hari Vamsi K. N, Tushar Barman, **Yash Bhisikar**, Sreenath T. M., Arnab K. Paul

Gradient-Based Optimisers Versus Genetic Algorithms in Deep Learning Architectures: A Case Study on Rainfall Estimation Over Complex Terrain ⊡
Abstract - EGU General Assembly 2024
Yash Bhisikar*, Nirmal Govindaraj*, Venkatavihan Devaki*, Ritu Anilkumar

SELECTED PROJECTS

Project Kratos ↗   Jun 2022 – Apr 2024
Core Member, Autonomous Subsystem
- Competed in international **Mars Rover prototype** competitions as part of a multidisciplinary student team
- Designed a **visual servoing algorithm** for navigation using arrow signs captured in a monocular camera feed, detected by a **YOLO** model trained on our custom dataset.
- Integrated a **PID-based** GPS navigation mechanism into the rover's tech stack, enabling rover's traversal between local GPS coordinates

CountCLIP: [Re] Teaching CLIP to Count to Ten ↗   Feb 2024 – May 2024
Collaborative Project at SAiDL, BITS Goa
- Reproduction attempt of **Teaching CLIP to Count to Ten** ↗ (published at CVPR'23) by Google Brain
- Augmented the loss function, surpassing baseline results and **improving performance with limited data**

Grasping Graphormer: Assessing Transformer Performance for Graph Representation ↗   Jun 2024
Blogpost-Tutorial Track, GRAM Workshop @ ICML 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 Modelling ↗   Jun 2023
Python, PyTorch, OpenAI Gym, Matplotlib, Jupyter
- Implemented the **Decision Transformer** ↗ paper by replacing the transformer with an **LSTM** to compare against model-free offline RL baselines on Mujoco's Hopper environment
- Used **sequences of Reward, State, and Action** tokens to condition the model and predict the next reward and action

SKILLS

Languages — Python, C/C++, Java, MySQL │ **Tools and Frameworks** — Linux, Git and Github, ROS, Gazebo, Docker, Kubernetes, Apache Kafka │ **Libraries** — PyTorch, JAX, Tensorflow, NumPy, Matplotlib, Pandas, OpenCV, PyGad

CLUBS AND COMMITTEES

Society for Artificial Intelligence and Deep Learning (SAiDl) ↗   Aug 2023 – present
Vice-President
- A group of undergraduate researchers with a broad interest in ML/DL research
- Organized a symposium ↗ , conducted courses ↗ , undertook research projects ↗ , and hosted paper-reading sessions

The Literary and Debating Club ↗   Jan 2022 – Dec 2024
Core Member
- Worked with a team in managing 80-100 crew members, attended debate tournaments, organized book-clubs & writing sessions and conducted a country-wide slam poetry contest in several cities

AWARDS

DAAD-Wise Scholarship 2024
- 1 of the 150 undergraduates selected for the programme. Hosted at TU Dresden under Prof. Christian Mayr

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

KVPY Fellowship
- KVPY is a National Program of Fellowship in Basic Sciences, initiated and funded by the Government of India