Jaisidh Singh

E-mail | LinkedIn | Website | GitHub | Google Scholar

Education

Eberhard Karls University of Tübingen Oct 2024 - Present
Master of Science in Machine Learning

Indian Institute of Technology Jodhpur Dec 2020 - May 2024
Bachelor of Technology in AI and Data Science

Technical Skills

Area of research: Deep learning, efficiency, multimodal reasoning
Languages: Python, LaTeX, JavaScript, Dart, Bash, C++
ML-DL frameworks: PyTorch, MLX, JAX/FLAX, NumPy
Other technologies: Selenium, ReactJS, NodeJS, ExpressJS, Flutter, Linux, Git, GraphQL

Selected Publications

Hyper-Align: Efficient Modality Alignment with Hypernetworks (ICLR WSL Workshop 2025) **Link:**
Jaisidh Singh, Diganta Misra, Boris Knyazev, Antonio Orvieto.

Learning the Power of "No": Foundation Models with Negations (WACV 2025) **Paper:**
*Jaisidh Singh**, Ishaan Shrivastava*, Mayank Vatsa, Richa Singh, Aparna Bharati

SynthProv: Interpretable Framework for Profiling Identity Leakage (WACV 2024) **Paper:**
Jaisidh Singh, Harshil Bhatia, Aparna Bharati, Richa Singh, Mayank Vatsa

*: indicates equal contribution

Research Experience

ELLIS Institute, Tübingen Jan 2025 to May 2025
With Antonio Orvieto, Boris Knyazev (SAIT Montreal)

- Working on parameter-predictors for efficient multimodal alignment.
  Published at **ICLR WSL Workshop 2025**.

Trusted AI Lab, IIT Jodhpur Aug 2022 - Jan 2023, Jul 2023 - May 2024
With Mayank Vatsa, Richa Singh, Aparna Bharati

- Analysed StyleGAN2's latent space to profile identity leakage.
  Published at **AAAI Student Abstracts 2023 and WACV 2024**.
- Developed CC-Neg, a multimodal dataset to benchmark & improve negation understanding in CLIP.
  Published at **WACV 2025**.

Bosch Research India, Bengaluru Summer 2022, May 2023 - Jan 2024
With Amit Arvind Kale, Sonam Singh

- Developed modular plug-and-play image retrieval pipelines for internal experiments.
- Devised an automated intepretabled framework for failure discovery for semantic segmentation (report).

Projects

- `loraclip` : A library to easily wrap LoRA layer insertion for CLIP. **GitHub:**
- `pytorch-mixtures` : A minimalist library for popular MoEs & MoD in PyTorch. **GitHub:**
- **Physics-informed ML tutorial** : An in-depth tutorial on forecasting continuous PDEs. **Link:**

Awards & Achievements

- Zuse School ELIZA fellowship for Masters students 2024.
- 6428 rank out of 1.5 million applicants in JEE Mains 2020, with rank 3214 in JEE Advanced 2020.
- Top ranks in several regional level Olympiads. Awarded with a laptop by the Science Olympiad Foundation.