

JAISIDH SINGH

✉ [E-mail](#) [in LinkedIn](#) 🏠 [Website](#) 🐙 [GitHub](#)

Education

Eberhard Karls University of Tübingen

Master of Science in Machine Learning

Oct 2024 to Present

Tübingen, Germany

Indian Institute of Technology Jodhpur

Bachelor of Technology in AI and Data Science

Dec 2020 to May 2024

Jodhpur, India

Relevant Coursework

Deep Learning (A+), Dependable AI (A), Optimization in ML (A), Pattern Recognition and ML (A), Speech Understanding (A), Decision Making and RL (A-), Computer Graphics (A-), Linear Algebra and Differential Equations (A-), Probability and Statistics (A-), CS231N[†]: Stanford Computer Vision, Nvidia-DLI[†]: Transformer Applications in NLP.

[†]: indicates completion in self-learning mode.

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.
- IdProv: Identity-Based Provenance for Synthetic Image Generation (Student Abstract) (**AAAI 2023**) **Paper:** [📄](#)
Harshil Bhatia, Jaisidh Singh*, Gaurav Sangwan, Aparna Bharati, Richa Singh, Mayank Vatsa.*

*: indicates equal contribution

Research Experience

ELLIS Institute, Tübingen

With Antonio Orvieto, Boris Knyazev (SAIT Montreal)

Jan 2025 to May 2025

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

IAB Lab, IIT Jodhpur

With Mayank Vatsa, Richa Singh, Aparna Bharati

May 2022 - Jan 2023, July 2023 - May 2024

- Showed how StyleGAN2’s latent space encodes face-recognition to profile identity leakage.
Published at **AAAI Student Abstracts 2023 and WACV 2024**.
- Developed a high-quality multimodal dataset containing negations in text,
which inspired novel additions to the CLIP loss for improved negation understanding.
Published at **WACV 2025**.

Bosch Research India, Bengaluru

With Amit Arvind Kale, Sonam Singh

Summer 2022, May 2023 - Jan 2024

- Developed modular plug-and-play image retrieval pipelines for internal experiments.
- Created an accurate framework for interpretable failure discovery for semantic segmentation, leading to a **technical report** [📄](#).

Technical Skills




Areas of research: Machine Learning, Deep Learning

Languages: Python, L^AT_EX, JavaScript, Dart, Bash, C++

ML-DL frameworks: PyTorch, MLX, HuggingFace, Jax, CUDA, Scikit-learn, NumPy

Other technologies: Selenium, ReactJS, NodeJS, ExpressJS, Flutter, Linux, Git, GraphQL

Presentations and Talks

- SynthProv: Interpretable Framework for Profiling Identity Leakage
Jaisidh Singh, Harshil Bhatia, Aparna Bharati, Richa Singh, Mayank Vatsa, WACV 2024. Poster:  Video: 
- IdProv: Identity-Based Provenance for Synthetic Image Generation (Student Abstract)
Harshil Bhatia, Jaisidh Singh*, Gaurav Sangwan, Aparna Bharati, Richa Singh, Mayank Vatsa*, AAAI 2023. Poster: 

Projects

pytorch-mixtures (GitHub)

- A plug-and-play module for Mixture-of-Experts and Mixture-of-Depths in PyTorch.
- A one-stop solution for inserting MoE layers into custom neural networks effortlessly.
- Supports Expert Choice Routing, capacity-based Top-k Routing, all with accelerated and efficient matmuls.

quickmatch (GitHub)

- A fast and easy command-line tool for using SOTA face-matchers.
- Embeds face images to face-matcher embedding spaces in one line, across all hardware accelerators.
- Supports ElasticFace, ArcFace, SphereFace, and FaceNet.

loracclip (GitHub)

- An efficient wrapper for inserting LoRA layers into CLIP for parameter-efficient fine-tuning.
- Developed custom LoRA insertions into both vision and language encoders at less than 1% of the original parameters.
- Seamlessly functions like the default CLIP code and with automatic checks for parameter anomalies.

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.

Extracurricular

Student Guide

2021

Student Wellbeing Committee

IIT Jodhpur

- Mentored 10 mentees personally and professionally.
- Worked with a team of 46 to handle a batch of 500 students.

Core Member

2021

Music Society, Quiz Society, Literature Society, DevUp Labs

IIT Jodhpur

- Seasoned guitarist, vocalist, avid reader.
- Performed at cultural events like Inter-IIT Cultural Meet 2023 & 2024, Ignus 2023, etc.
- Assumed collaborative and leadership roles in coordinating activities with juniors.