

Education

- Oct'22 – **ELLIS / University of Tübingen / University of Cambridge.**
present PhD, MACHINE LEARNING
- Sep'21 – **University of Cambridge.**
- Aug'22 MPHIL, MACHINE LEARNING AND MACHINE INTELLIGENCE
Percentage – 77.21/100 (Distinction)
- Aug'16 – **IIIT Delhi.**
- May'20 BTECH, COMPUTER SCIENCE AND ENGINEERING
GPA – 9.17/10

Publications

- **V. Udandaraao***, A. Prabhu*, A. Ghosh, Y. Sharma, P.H.S. Torr, A. Bibi, S. Albanie, M. Bethge, “No "Zero-Shot" Without Exponential Data: Pretraining Concept Frequency Determines Multimodal Model Performance”, ICLR (DPFM workshop) 2024 [\[paper\]](#)[\[code\]](#)
- **V. Udandaraao***, A. Prabhu*, P.H.S. Torr, M. Bethge, A. Bibi, S. Albanie, “Lifelong Benchmarks: Efficient Model Evaluation in an Era of Rapid Progress”, ICLR (DMLR workshop) 2024 [\[paper\]](#)[\[code\]](#)
- **V. Udandaraao***, M. Burg, S. Albanie, M. Bethge, “Visual Data-Type Understanding does not emerge from Scaling Vision-Language Models”, ICLR 2024 [\[paper\]](#)[\[code\]](#)
- **V. Udandaraao**, A. Gupta, S. Albanie, “SuS-X: Training-Free Name-Only Transfer of Vision-Language Models”, ICCV 2023 [\[paper\]](#)[\[code\]](#)
- **V. Udandaraao***, S. Nath*, J. Shukla, “It's LeVAsa not LevioSA! Latent Encodings for Valence-Arousal Structure Alignment”, CODS-COMAD 2021 [\[paper\]](#)[\[code\]](#)
- **V. Udandaraao***, A. Maiti*, D. Srivatsav*, S.R. Vyalla*, Y. Yin, R.R. Shah, “COBRA: Contrastive Bi-Modal Representation Algorithm”, IJCAI (TUSION workshop) 2020 [\[paper\]](#)[\[code\]](#)
- **V. Udandaraao***, A. Agarwal*, A. Gupta, T. Chakraborty, “InPHYNet: Leveraging Attention-based Multitask Recurrent Networks for Multi-label Physics Text Classification”, Knowledge Based Systems 2020 [\[paper\]](#)[\[code\]](#)
- **V. Udandaraao***, M. Agrawal*, R. Kumar, R.R. Shah, “On the Inference of Soft Biometrics from Typing Patterns Collected in a Multi-device Environment”, BigMM 2020 [\[paper\]](#)[\[code\]](#)
- **V. Udandaraao***, S. Bhagat*, S. Uppal*, “DisCont: Self-Supervised Visual Attribute Disentanglement using Context Vectors”, ICML (MLI4SD workshop) 2020, ECCV (PTSGM workshop) 2020 [\[paper\]](#)[\[code\]](#)[\[slides\]](#)
- **V. Udandaraao***, S.R. Vyalla*, T. Chakraborty “Memeify: A Large-Scale Meme Generation System”, CODS-COMAD 2020 [\[paper\]](#)[\[code\]](#)[\[slides\]](#)
- **V. Udandaraao***, A. Agarwal*, N. Sachdeva*, R. K. Yadav*, V. Mittal*, A. Gupta, A. Mathur, “EDUQA: Educational Domain Question Answering System Using Conceptual Network Mapping”, ICASSP 2019 [\[paper\]](#)[\[poster\]](#)

Research Experience

- Oct'22 – **Computational Neuroscience and Machine Learning Group, University of Tübingen.**
present Advisors: Prof Dr Matthias Bethge, Dr Samuel Albanie
- Understanding the generalisation properties of foundation models through a data-centric lens.
 - Understand and build strong inductive biases into foundation models to equip them for continual generalisation.
- Mar'22 – **Machine Intelligence Lab, University of Cambridge.**
- Dec'22 Advisors: Dr Samuel Albanie, Dr Ankush Gupta
- Investigating the visual few-shot performance potential of large scale multi-modal foundation models.
 - Understand the abilities of two particular few-shot adaptation techniques – adapters and prompt learning.
- Jul'20 – **Rutgers Machine Learning Lab (RUMML), Rutgers University.**
- Jul'21 Advisor: Dr Sungjin Ahn
- Empirical investigation of slot-based and box-based approaches to object centric representation learning.
 - Understand the abilities of slot and box approaches to improve downstream task performance pertaining to different abilities extending to complex morphological scenes.

Mar'20 – **MIDAS Lab, IIIT Delhi.**

Jul'20 Advisors: Dr Rajiv Ratn Shah, Rajesh Kumar

- Discover privacy leaks from behavioural biometric data.
- Understand the extent of privacy leakage factors that can be exposed based on per-user typing/swipe/gait features using machine/deep learning.

Jul'19 – **Infosys Center for Artificial Intelligence (CAI) Lab, IIIT Delhi.**

Aug'20 Advisor: Dr Saket Anand

- Unsupervised learning of disentangled representations.
- Learn well disentangled, statistically independent latent factors of variation helping to reduce sample complexity of downstream tasks and generate high fidelity reconstructions.

Aug'18 – **Signal Processing and Biomedical Imaging (SBI) Lab, IIIT Delhi.**

Aug'20 Advisors: Dr Anubha Gupta, Dr Tanmoy Chakraborty

- Creation of self-learning chatbots for assisting teachers in understanding pedagogical content.
- Proposed an educational-domain QA system using concept-network mapping.

Industry Experience

June'24 – **Google Research, Zürich, Switzerland.**

Nov'24 Student Researcher

- Research on vision-language models

July'20 – **Myntra, Bengaluru, India.**

Aug'21 Software Engineer

- Built and deployed scalable APIs to serve a target customer base of around 15m consumers around India.
- Mentored 5 software engineering interns on an end-to-end log anomaly detection project.

May'19 – **Expedia Group, Gurugram, India.**

Jul'19 Software Development Intern

- Created and deployed a scalable image ranking solution for images of destination locations.
- Conducted extensive statistical tests on a dataset of 10k+ images.

Invited Talks and Podcasts

- ELLIS Flagship Conference, Helsinki, 06/2024
- University of Washington, 06/2024
- AI'N Stuff Podcast, 04/2024
- DatologyAI, 04/2024
- Workshop on Scaling Laws, NeurIPS, 12/2023
- Explainable Machine Learning Group, University of Tübingen, 11/2023
- LAION, 08/2023

Honors & Awards

- ELLIS PhD Scholarship, 2022
- Recipient of HRH The Prince of Wales Commonwealth Scholarship from the Cambridge Trust, 2021-22
- IIIT-Delhi Dean's Award for Academic Excellence 2016-17, 2018-19
- Was the topper across all schools in the Gulf region in CBSE AISSCE 2016 exams (All India Rank 7)

Reviewing Experience

- NeurIPS-2024
- ECCV-2024
- CVPR-2023
- WACV-2020/2022/2023
- IJCV-2023

Teaching Experience

- TA, Deep Learning, Prof. Saket Anand, Spring'20
- TA, Machine Learning, Prof. Jainendra Shukla, Fall'19
- TA, Introduction to Engineering Design, Prof. Aman Parnami, Spring'19
- TA, Linear Algebra, Prof. Samaresh Chatterjee, Fall'18