

# SUSMIT AGRAWAL

✉ [ai22mtech12002@iith.ac.in](mailto:ai22mtech12002@iith.ac.in)  [linkedin.com/in/susmitagrawal](https://www.linkedin.com/in/susmitagrawal)  [github.com/Susmit-A](https://github.com/Susmit-A)  [susmit-a.github.io](https://github.com/susmit-a)

## Current Research Interests

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NeuroAI, Multimodal Learning, Computer Vision, Interpretability

## Education

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**Indian Institute of Technology - Hyderabad**

**Aug. 2022 – July 2025**

*M.Tech. (3-year RA) in Artificial Intelligence*

*GPA: 9.41/10.0*

## Academic Research Experience

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**Research Assistant (Advisor: Prof. Vineeth N. Balasubramanian)**

**Aug. 2022 – Present**

*ML/CV Lab, IIT Hyderabad*

*Hyderabad, Telangana, India*

- Worked on Continual Learning for interpretable models.
- Worked on formulation and applications of Neuro-Inspired Memory Networks.
- Worked on Spiking Neural Networks for Language Modelling on Neuromorphic Devices, and new SNN and Synapse architectures (Supervisor: Prof. Ayon Borthakur).

**Research Assistant (Advisor: Prof. R. Venkatesh Babu)**

**Sept. 2020 – Jan. 2022**

*Video Analytics Lab, Indian Institute of Science. | Verisk Analytics*

*Bangalore, Karnataka, India*

- Worked on self-supervised learning for image forensics.
- Worked on generative model training with very small datasets (1000 images).
- Worked on Deep HDR Deghosting with minimal/nonexistent labeled data for supervision.

**Research Intern (Advisor: Prof. R. Venkatesh Babu)**

**Jan. 2020 – Aug. 2020**

*Video Analytics Lab, Indian Institute of Science*

*Bangalore, Karnataka, India*

- Worked on HDR Deghosting, Multi-Exposure Fusion, Image Segmentation, Few-Shot learning, and Self-Supervised Learning.

**Undergraduate Student Researcher**

**Jan. 2019 – Jan. 2020**

*SMVIT*

*Bangalore, Karnataka, India*

- Worked with Transformer architectures (BERT and GPT-2) to develop a Medical Question-Answering system.
- Worked with custom-built edge devices to develop a distributed irrigation system.

## Publications (\* represents equal contribution)

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**Under review at an A\* venue**

Tarun Ram Menta\*, **Susmit Agrawal\***, Chirag Agarwal, “Analyzing Memorization in Large Language Models through the Lens of Model Attribution”

**ACL Rolling Reviews: Overall Assessment - 4/5**

Aanisha Bhattacharya\*, **Susmit Agrawal\***, Yaman K. Singla\*, Nikitha S.R., Tarun Ram Menta, Balaji Krishnamurthy, “Learning Behavior Helps LLMs Predict Human Opinions”

**(Accepted) AAAI Conference on Artificial Intelligence**

**View (Accepted Version)**

**Susmit Agrawal**, Deepika Vemuri, Sri Siddarth Chakravarthy, Vineeth N. Balasubramanian, “Walking the Web of Concept-Class Relationships in Incrementally Trained Interpretable Models”

**Association for Computational Linguistics (ACL) 2023**

**View**

Abhinav Joshi, **Susmit Agrawal**, Ashutosh Modi, “ISLTranslate: Dataset for Translating Indian Sign Language”

**European Conference on Computer Vision (ECCV) 2022**

**View**

Tejan Karmali, Rishubh Parihar, **Susmit Agrawal**, Harsh Rangwani, Varun Jampani, Maneesh Singh, R. Venkatesh Babu, “Hierarchical Semantic Regularization of Latent Spaces in StyleGANs”

**Conference on Computer Vision and Pattern Recognition (CVPR) 2022 - WMF Workshop**

**View**

**Susmit Agrawal**, Prabhat Kumar\*, Siddharth Seth\*, Toufiq Parag, Maneesh Singh, R. Venkatesh Babu, “SISL: Self-Supervised Image Signature Learning for Splicing Detection and Localization”

**Winter Conference on Applications of Computer Vision (WACV) 2022** [View](#)  
Tejan Karmali\*, Abhinav Atrishi\*, Sai Sree Harsha, **Susmit Agrawal**, Varun Jampani, R. Venkatesh Babu,  
“LEAD: Self-Supervised Landmark Estimation by Aligning Distributions of Feature Similarity”

**IEEE Transactions on Computational Imaging** [View](#)  
K. Ram Prabhakar\*, **Susmit Agrawal\***, R. Venkatesh Babu, “Self-Gated Memory Recurrent  
Network for Efficient Scalable HDR Deghosting”

**Conference on Computer Vision and Pattern Recognition (CVPR) 2021** [View](#)  
K. Ram Prabhakar, Gowtham Senthil\*, **Susmit Agrawal\***, R. Venkatesh Babu, Rama Krishna Sai  
S Gorthi, “Labeled From Unlabeled: Exploiting Unlabeled Data for Few-Shot Deep HDR Deghosting”

**International Conference on Learning Representations (ICLR) 2021 - AI4PH Workshop** [View](#)  
Vishal Vinod\*, **Susmit Agrawal\***, Vipul Gaurav\*, Pallavi R., Savita Choudhary, “Multilingual  
Medical Question Answering and Information Retrieval for Rural Health Intelligence Access”

**European Conference on Computer Vision (ECCV) 2020** [View](#)  
K. Ram Prabhakar, **Susmit Agrawal**, Durgesh Singh, Balraj Ashwath, R. Venkatesh Babu,  
“Towards Practical and Efficient High-Resolution HDR Deghosting with CNN”

## Industry Experience

**Research Intern** **Apr. 2024 – Oct. 2024**  
*Adobe Media Data Science and Research (MDSR)* *Noida, UP, India*

- Worked on alignment of LLMs with Human Opinions using behavioral signals from in-the-wild data.
- Working on Ad content generation with LLMs for targeted audiences.
- Working on prompt-based planning using multiple LLM Agents.

**Computer Vision and Display Systems Engineer** **Feb. 2022 – July 2022**  
*Qualcomm* *Bangalore, Karnataka, India*

- Worked on building Computer Vision models for Image Super Resolution.
- Worked on model architecture optimization for deployment in restricted environments.
- Worked on finding and fixing failure cases of trained models based on performance on real-world validation sets.
- Worked with traditional image processing algorithms for picture quality enhancement.

**Deep Learning Intern (remote)** **Mar. 2019 – Jun. 2019**  
*IGM Software LLP.* *Mumbai, Maharashtra, India*

- Trained YOLO v3 and RNN-based optical character recognition models for detecting license plates and reading their content.
- Deployed the system on edge device (Raspberry Pi) connected to security cameras.
- Deployed the system on AWS servers for access over API calls.

## Scholarships and Awards

**Reliance Postgraduate Scholar 2023** **Aug. 2023**  
*Reliance Foundation* *One among 100 national scholars*

**Chhatra Vishwakarma Award** **Feb. 2020**  
*All India Council for Technical Education (AICTE)* *Winner*

**NASA International SpaceApps Challenge** **Oct. 2018**  
*NASA* *National Winner (India)*

**Futureskills Hackathon** **Sept. 2018**  
*NASSCOM* *Winner*

## Projects

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### DeepDream on Android | *Java, Python, Tensorflow*

[View code](#)

- Implemented DeepDream for InceptionV3, VGG16, VGG19, ResNet-50.
- Used models pre-trained on ImageNet to perform DeepDream on Android devices, without involvement of online server.

### Style Transfer with CycleGAN | *Python, Tensorflow*

[View code](#)

- Used CycleGAN with modifications in training method for Style Transfer.
- Trained network on a set of 2000 filtered images taken from a large set of images scraped from the web.

### Open-source code editor, ported to Android | *Java, JavaScript*

[View code](#)

- Ported the web-based Ace Editor to Android.
- Mapped keyboard-based controls and shortcuts to on-screen options for better user experience on touchscreen devices.

### A basic x86 kernel | *C, C++, x86 assembly*

[View code](#)

- Built to understand how bare-metal programs work.
- Implemented core kernel features - interrupts and display driver.

## Teaching

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### TA: Explainable Machine Learning

Fall 2024 Semester

*Instructor: Prof. Konda Reddy Mopuri*

### Head TA: Deep Learning

Spring 2024 Semester

*Instructor: Prof. Konda Reddy Mopuri*

### TA: Operating Systems

Fall 2023 Semester

*Instructor: Prof. Sathya Peri*

## Volunteering and Community Involvement

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### Volunteer: ACML 2022

Dec. 2022

### Reviewer

*NeurIPS 2024, CVPR 2024, ICLR 2024, WACV 2023, IJCAI 2023, CVPR 2022, ECCV 2022, CVPR 2021, IEEE TPAMI*

### Administrator for Lab 1055 Servers

Jan. 2023 – Present