

ADITYA KANE

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EDUCATION

Georgia Institute of Technology

MS in Computer Science

Fall 2023 - Present

Pune Institute of Computer Technology, Pune (Affiliated to Savitribai Phule Pune University)

Bachelor of Engineering in Computer Engineering with Honors in Artificial Intelligence and Machine Learning

CGPA: 9.728/10

2019-2023

EXPERIENCE

Research Intern | Indian Institute of Science, Bengaluru

May 2022 - December 2022

Prof. Suresh Sundaram and Dr. Chandan Gautam | Out-of-Distribution (OOD) Detection and Open Set Recognition in NLP

- Worked on **Out-of-Distribution and Open Set detection** in NLP at Artificial Intelligence and Robotics Lab, IISc, Bengaluru.
- Explored various methods for **few-shot unsupervised OOD detection** using meta learning and demonstration-based data augmentation.
- Investigated **unsupervised open set recognition** methods for NLP using **compute-efficient model** architectures.
- Explored few-shot and continual setups for open set detection in NLP.

Student Developer Intern at KerasCV | Google Summer of Code 2022

May 2022 - September 2022

Sayak Paul, Luke Wood | Computer Vision

- Implemented various model blocks like **StochasticDepth**, **DropPath**, **SqueezeAndExcite** and incorporated them into KerasCV.
- My code contributions included addition of augmentation layers with **bounding box support** like **Inception crop** and other bug fixes. Added a new **robust serialization test** which eliminated the need of hand-engineered tests for new modules.
- Worked on porting over Computer Vision models like **ResNets**, **EfficientNets**, **RegNets** to KerasCV. Report available [here](#).

Student Developer Intern at TensorFlow | Google Summer of Code 2021

May 2021 - August 2021

Sayak Paul, Morgan Roff | Computer Vision

- Implemented and trained four variants of RegnetY from the paper "**Designing network design spaces**" on **ImageNet-1k** using **TensorFlow 2**.
- Created efficient data input pipelines and trained four variants of RegNetY on **Google Cloud TPUs**.
- The resulting models had **exceptional inference speeds** and are now publicly available via TFHub. Report available [here](#).

Research Assistant | PICT, Pune

October 2020 - Present

Prof. Geetanjali Kale | Object detection

- Working on the research project "Question Wise segmentation of Handwritten examination paper in AI-Assisted Grading System". Responsible for designing and maintaining codebase and dataset of the project.
- Used **RetinaNet** to **segment questions** in a handwritten answer sheet. Created scripts using **PyTorch** for training, testing and inference. Achieved significant improvement over present methods.
- Currently **drafting** the paper for submission to a scientific journal. Published a patent for this system ([link](#)).

PUBLICATIONS & RESEARCH

[C: Conference, W: Workshop, P: Patent]

C1. Unsupervised Out-of-Distribution Detection Using Few In-Distribution Samples

June 2023

[Poster] ICASSP 2023

[Link](#)

· *Authors: Chandan Gautam, Aditya Kane, Savitha Ramasamy, Suresh Sundaram*

C2. Leveraging Class Name for Out-of-Scope Intent Classification

· *Under review*

C3. My Boli: Code-mixed Marathi-English Corpora, Pretrained Language Models and Evaluation Benchmarks

· *Under review*

P1. System and Method for Automated Evaluation of Multimodal Contents

October 2022

The Patent Office Journal of India

[Link](#)

· *Inventors: Aditya Kane, Mihir Godbole, Madhuri Wakode, Parth Rajwade, Geetanjali Kale*

W1. Continual VQA for Disaster Response Systems

October 2022

[Poster] Tackling Climate Change with Machine Learning Workshop NeurIPS 2022

[Paper](#) | [Code](#) | [WandB](#)

· *Authors: Aditya Kane, V Manushree, Sahil Khose*

- W2. Spread Love Not Hate: Undermining the Importance of Hateful Pre-training for Hate Speech Detection**
 [Poster] *I Can't Believe It's Not Better Workshop NeurIPS 2022* [Paper](#)
 · Authors: Omkar Gokhale, **Aditya Kane**, Shantanu Patankar, Tanmay Chavan, Raviraj Joshi
- W3. Efficient Gender Debiasing of Pre-trained Indic Language Models** November 2022
 [Oral] *Workshop on Deployable AI AAAI 2023* [Paper](#) | [Code](#)
 · Authors: Neeraja Kirtane, V Manushree, **Aditya Kane**
- W4. An Efficient Modern Baseline for FloodNet VQA** May 2022
 [Oral] *NewInML Workshop ICML 2022* – Best Paper Award [Paper](#) | [Code](#)
 · Authors: **Aditya Kane**, Sahil Khose
- W5. Temporal Word Meaning Disambiguation using TimeLMs** October 2022
 [Poster] *EvoNLP workshop EMNLP 2022* [Paper](#)
 · Authors: Mihir Godbole, Parth Dandavate, **Aditya Kane**
- W6. Two-stage Pipeline for Multilingual Dialect Detection** March 2023
 [Oral] *VarDial Workshop EACL 2023* [Paper](#) | [Code](#)
 · Authors: Ankit Vaidya and **Aditya Kane**
- W7. Transformer based ensemble for emotion detection** March 2022
 [Oral] *WASSA Workshop ACL 2022* [Paper](#) | [Code](#) | [WandB](#)
 · Authors: **Aditya Kane**, Shantanu Patankar, Sahil Khose, Neeraja Kirtane
- W8. Large Language Models for Multi-label Propaganda Detection** October 2022
 [Poster] *Arabic Natural Language Processing Workshop EMNLP 2022* [Paper](#)
 · Authors: Tanmay Chavan, **Aditya Kane**
- W9. A Twitter BERT Approach for Offensive Language Detection in Marathi** October 2022
 [Poster] *HASOC 2022 Forum for Information Retrieval Evaluation Proceedings 2022* [Paper](#)
 · Authors: Tanmay Chavan, Shantanu Patankar, **Aditya Kane**, Omkar Gokhale, Raviraj Joshi

PROJECTS

- Added RegNets to tf.keras.applications** January 2022
Computer Vision
 · Extended my project from Google Summer of Code to encompass a wider scope. Trained **24** variants of RegNets on the **ImageNet-1k** dataset.
 · These models are now added to `tf.keras.applications` and are available in TensorFlow 2.9 and later.
 · Collaborators: Sayak Paul. Models available at: tensorflow.org/tf/keras/applications/regnet
- Limited Supervision Architectures** September 2022
Deep Learning
 · Every week we **implement vital components** of state-of-the-art architectures for **limited supervision** under 2 hours.
 · The aim is to get a **deeper understanding** of the architectures. As a prerequisite, we read the paper but refrain from looking at the code.
 · We have implemented ViTs, GANs and CycleGANs so far. We plan to implement SimCLR and MAE in near future.
 · Collaborators: Sahil Khose. GitHub repo: [AdityaKane2001/noob_speedrun](https://github.com/AdityaKane2001/noob_speedrun)

VOLUNTEER EXPERIENCE

- TensorFlow User Group (TFUG) Pune** September 2021 - Present
 · Co-organizer of TensorFlow User Group, Pune. TFUGs are local communities of students and practitioners of the TensorFlow library. Our community has **3000+ registered members**. We enjoy a turnout of around 40 people for each monthly event.
 · Received the **"Most Impactful Community Leader"** award by Google for consistently organizing most TFUG events in 2021.
- Book review** September 2022
 · Reviewed the book "[Practical Deep Learning for Computer Vision with Python](#)" by David Landup.
 · The book takes a code-first approach to computer vision. The book aims to deliver content on cutting-edge libraries and technologies, like KerasCV. Additionally, it provides guided projects for the readers to implement the concepts learnt in the book firsthand.
 · The review demands studying the book thoroughly, including proofreading, implementing the code and guided projects and much more.

TECHNICAL SKILLS

| | |
|-------------------|--|
| Languages | Python, C++, PHP, SQL, HTML |
| Frameworks | NumPy, TensorFlow, Keras, PyTorch, JAX, Flax |
| Others | Git and GitHub, Google Cloud |