

ADITYA KANE

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EDUCATION

Georgia Institute of Technology

MS in Computer Science

Incoming Fall 2023

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

2019-2023

CGPA: 9.728/10

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