

# ADITYA KANE

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## EDUCATION

Examination	University	Institute	Year	CGA/%
Bachelor of Computer Engineering	Savitribai Phule Pune University	Pune Institute of Computer Technology	2023	9.77
Intermediate/ +2	HSC	Sri Chaitanya Institutes	2019	84.61%
Matriculation	SSC	BVB's Paranjape Vidya Mandir	2017	93.6%

Currently pursuing **Third Year of Bachelor of Computer Engineering**

August 2019 - Present

## INTERNSHIPS

### Research Intern — IISc, Bengaluru

May 2022 - Present

*Prof. Suresh Sundaram | Out-of-Distribution Detection and Open Set Recognition in NLP*

- Working on Out-of-Distribution detection in NLP under the guidance of Dr. Chandan Gautam.
- Explored various methods including few-shot unsupervised OOD detection and continual open set recognition.

### Student Developer Intern — Google Summer of Code

May 2021 - August 2021

*TensorFlow | Computer Vision*

- Implemented and trained four variants of RegnetY from the paper “**Designing network design spaces**” by Facebook AI Research on **ImageNet-1k** using **TensorFlow 2**.
- Created efficient data input pipelines and trained four variants of RegNetY on **Google Cloud TPUs**.
- Created multiple scripts for efficient data preprocessing, implemented custom training loop and inference functions. Used **Python** and TensorFlow’s Python API.
- The resulting models had **exceptional inference speeds** and are now publicly available via TFHub.

### Research Intern — 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 multiple scripts using **PyTorch** for seamless training, testing and inference.
- Achieved significant improvement over present text detectors on this task. Currently working on **drafting and finalizing** the paper for submission to a reputed scientific journal.

## PROJECTS

### Added RegNets to tf.keras.applications

January 2022

*Computer Vision*

- Extended my project from Google Summer of Code to encompass a wider scope.
- Implemented and trained **24** variants of RegNets on the **Imagenet-1k** dataset.
- These models are now added to `tf.keras.applications` and are available here: [tensorflow.org/tf/keras/applications/regnet](https://tensorflow.org/tf/keras/applications/regnet)

## PUBLICATIONS

### An Efficient Modern Baseline for FloodNet VQA

May 2022

*Under Review*

- We propose a simple system for visual question answering (VQA) based on modern vision and language architectures.
- We design a VQA system for FloodNet dataset using fundamental feature combination methods like concatenation, addition and multiplication.
- Improved state-of-the-art results on FloodNet dataset by a considerable margin.
- Our paper is available on arxiv and our code is available at [sahilkhose/floodnet\\_vqa](https://github.com/sahilkhose/floodnet_vqa).

### Transformer based ensemble for emotion detection

March 2022

*Accepted at ACL WASSA Workshop 2022*

- Developed ensemble based solution consisting of multiple ELECTRA and BERT models. Proposed methods for synthetically generating datasets to mitigate distribution imbalance.
- We study the behaviour of our models and ensemble of models on various raw and synthetically generated datasets.
- Our paper is available on ACL Anthology, our code is available at [AdityaKane2001/ACL\\_WASSA](https://github.com/AdityaKane2001/ACL_WASSA) and our experiments are available on Weights & Biases.

## VOLUNTEER EXPERIENCE

**TensorFlow User Group (TFUG) Pune**

- Co-organizer of TensorFlow User Group, Pune.
- Received the “**Most Impactful Community Leader**” award for organizing most TFUG events in 2021.

## COURSES UNDERTAKEN

### Online Courses

Deep Learning (Specialization), DeepLearning.AI TensorFlow Developer (Specialization),  
Web Applications for Everybody (Specialization)

### Academic Courses

- Data Structures and Algorithms, Object Oriented Programming, Software Engineering, Computer Graphics, Database Management Systems, Computer Networks and Security, Distributed Systems, Systems Programming and Operating Systems
- Engineering Mathematics I, II and III, Discrete Mathematics, Computational Statistics

## TECHNICAL SKILLS

<b>Languages</b>	Python (proficient), C++ (working knowledge), PHP, SQL, HTML
<b>Packages</b>	TensorFlow, Keras, PyTorch, JAX, NumPy
<b>Others</b>	Git and GitHub, Google Cloud