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 and Open Set detection** in NLP under the guidance of Dr. Chandan Gautam.
- Explored various methods for **few-shot unsupervised Out-of-Distribution detection** and performed extensive experiments for the same.
- Explored **unsupervised open set recognition** methods for NLP using **compute-efficient model** architectures.

Student Developer Intern — Google Summer of Code May 2021 - August 2021, May 2022 - Present
TensorFlow, KerasCV | Computer Vision .

- Implemented various model blocks like StochasticDepth, DropPath, SqueezeAndExcite and incorporated them into KerasCV.
- My code contributions include addition of augmentation layers like Inception crop and other bug fixes.
- Working on porting over Computer Vision models like ResNets, EfficientNets and others to KerasCV.

Student Developer Intern — Google Summer of Code
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

PUBLICATIONS

An Efficient Modern Baseline for FloodNet VQA May 2022
Accepted at ICML NewInML Workshop 2022

- 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 concatentation, 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.

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 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

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