SHREYAS KALVANKAR

Nashik, Maharashta, India

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EDUCATION

Bachelor of Engineering (Computer Engineering) *2017 - 2021*
K.K. Wagh Institute of Engineering Overall GPA: 9.7/10
Education & Research, Nashik

Higher Secondary Certificate *2017*
HPT Arts & RYK Science College, Nashik Percentage: 87.07%

PROFESSIONAL EXPERIENCE

Relfor Labs Pvt. Ltd. August 2021 - November 2021
Machine Learning Engineer *Pune, India*

- Worked on audio data classification and designed multiple novel deep convolutional neural network architectures and hybrids which beat state of the art models with **>99%** accuracy and ∼**0.99** F1-score
- Performed extensive research on the designed architectures to understand data distribution of the network embeddings to create **novel loss functions**, a **customized gated unit block** and model tweaks for effectively boosting performance
- Analysed the network output distribution by applying statistical methods for calculating threshold values to remove false positives to boost model performance to ∼**99.98%** accuracy and **100%** precision

FinIQ Consulting India Pvt. Ltd. May 2020 - June 2020
Software Development Intern *Nashik, India*

- Developed a front-end using AngularJS for forex trading with interactive visualization and chatbot service, providing an appealing platform for forex operations
- Studied OLAP and data cubes for business intelligence on new company products to increase sales
- Studied technical analysis of market indices and option chain (equity derivatives) for better pricing models
- Created a python module for stress testing CPU and memory as per user input using variable load calibration
- Documented relevant codes and procedure
- GitHub: CPU and Memory Stressing module & Forex Trading Platform

PUBLICATIONS

Shreyas Bapat et al. *EinsteinPy: A Community Python Package for General Relativity.* 2020.
arXiv: 2005.11288 [gr-qc].

Shreyas Kalvankar et al. *Galaxy Morphology Classification using EfficientNet Architectures.* 2020.
arXiv: 2005.13611 [cs.CV].

Shreyas Kalvankar et al. *Astronomical Image Colorization and upscaling with Generative Adversarial Networks.* 2021.
arXiv: 2112.13865 [eess.IV, cs.CV, cs.LG].

PROJECTS & RESEARCH

Astronomical Image Colorization and Super-resolution using GANs August 2020 - June 2021

- A project for efficiently colorizing and up scaling unused astronomical images that could be potentially used for astronomical studies
- Created a dataset for the underlying problem by scraping images off the Hubble archives
- Developed variations of GAN architectures, effectively creating a novel training method, for colorizing images achieving visually pleasing results
- Implemented a variation of SRGAN architecture suitable for the data and obtained high resolution images

The Galaxy Zoo Project August 2019 - September 2020

- A galaxy morphology classification project, based on Kaggle Galaxy Zoo 2 competition
- Developed a CNN for vote fraction predictions of 37 galaxy features from the Galaxy Zoo decision tree with an rmse score of **0.07765**, ranking us in the **top 3** on the public leaderboard
- Developed a CNN for classification of galaxies into 7 classes based on their morphologies with an accuracy of **93.7%** and an F1 score of **0.8857**

The EinsteinPy Project March 2020 - April 2020

- Contributer to an open source community python package for general relativity
- Added Reissner–Nordström metric: a static solution to the Einstein-Maxwell field equations, into the code
- Corrections in the Kerr-Newman and Kerr metrics classes
- Added calculations of event horizon and ergosphere for a Kerr-Newman blackhole
- DOI: 10.5281/zenodo.4445219

Miyazaki Art Cycle GAN June 2021 - July 2021

- A cycle GAN project for producing animated images in Studio Ghibli art style
- Used conditional GANs in cyclic fashion to effectively produce anime style abstractions of real world photographs

Robocon August 2018 - April 2019

- Assigned to build and code a quadruped robot and a wheeled robot with dynamic locomotive abilities for ABU Robocon 2019
- Two robots were created, one being an autonomous quadruped and the other a wheeled robot which had dynamic locomotive abilities

TECHNICAL STRENGTHS

Computer Languages	C/C++, Python, Java, SQL
Web Development	AngularJS, Typescript, HTML, CSS
Deep Learning Frameworks	Keras, TensorFlow, PyTorch
Machine Learning Frameworks	Octave, Sci-kit
Embedded Systems	Arduino, RaspberryPi, Teensy
Version Control	Git, GitHub
Tools	Numpy, Pandas, Scipy, LaTeX