

SHREYAS KALVANKAR

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EDUCATION

Bachelor of Engineering (Computer Engineering) K.K. Wagh Institute of Engineering Education & Research, Nashik	2017 - 2021 Overall GPA: 9.7/10
Higher Secondary Certificate HPT Arts & RYK Science College, Nashik	2017 Percentage: 87.07%
Secondary School Certificate Boys' Town Public School, Nashik	2015 Percentage: 94.4%

TECHNICAL STRENGTHS

Computer Languages	C/C++, Python, Java
Web Development	AngularJS, Typescript
Deep Learning Frameworks	Keras, TensorFlow, Pytorch
Machine Learning Frameworks	Octave, Sci-kit
Embedded Systems	Arduino, RaspberryPi, Teensy
Version Control	Git, GitHub

EXPERIENCE

FinIQ Consulting India Pvt. Ltd. <i>Software Development Intern</i>	May 2020 - June 2020
<ul style="list-style-type: none">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 salesStudied technical analysis of market indices and option chain (equity derivatives) for better pricing modelsCreated python module for stress testing CPU and memory with variable load for integration in the company cloud platforms' testing pipelineDocumented relevant codes and procedureGitHub: 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 \[cs.CV\]](#).

PROJECTS & RESEARCH

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.
- Studied different architectural blocks to enhance performance.
- 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

- Contributor to an open source community python package for general relativity.
- Addition of 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](https://doi.org/10.5281/zenodo.4445219)

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.
- Researched and developed variations of GAN architectures for colorizing images, achieving visually pleasing results.
- Implemented a variation of SRGAN architecture suitable for the data and obtained high resolution images.

Miyazaki Art Cycle GAN

June 2020 - Present

- 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

Time series analysis and prediction

March 2019

- Developed a recurrent neural network that analyses time series and predicts future time frame
- Project consisted of using pandemic data of active cases and visualising them as a time series and predicting the epi-curve for COVID-19

Natural Language Processing

December 2019 - May 2020

- Made various short projects relating to Natural Language Processing
- Created a RNN model and trained it over jokes dataset to generate jokes
- Created a RNN & LSTM network model and trained it over a poem dataset to generate poems
- Created and trained an ngram model and trained it over twitter data to generate tweets

POSITIONS OF RESPONSIBILITY

Team Vector

Developer and Researcher

August 2018 - April 2019

ABU Robocon 2019

- Assigned to build and code a quadruped robot and a wheeled robot with dynamic locomotive abilities for ABU Robocon 2019.
- Performed extensive research on motion planning, gait analysis, inverse kinematics and dynamics of multi-body systems.
- Two robots were created, one being an autonomous quadruped and the other a wheeled robot which had dynamic locomotive abilities.

Team Vector

Mentor

August 2019 - April 2020

ABU Robocon 2020

- Helped and guided junior members of the team in building a holonomic omniwheeled robot.
- Guided members for accurate trajectory calculations, acutations and motion of the robot which could effectively throw, pass and catch a football.

RELEVANT COURSES

Core Courses

Data Structures and Algorithms
Machine Learning
Operating Systems
Theory of Computation
Data Analytics
Computer Organization
Artificial Intelligence and Robotics

MOOC

Deep Learning
Computer Vision
Tensorflow and Keras

Other Relevant Courses

Introduction to General Theory of Relativity
Linear Algebra
Mathematics for Machine Learning

INTERESTS

Deep Learning
Linear Algebra
Algorithms
Differential Geometry & General Relativity

Generative Models
Theoretical Machine Learning
Data Science
Quantum Physics