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: 9.58/10
Education & Research, Nashik	
Higher Secondary Certificate	*2017*
HPT Arts & RYK Science College, Nashik	Percentage: 87.07%
Secondary School Certificate	*2015*
Boys' Town Public School, Nashik	Percentage: 94.4%

TECHNICAL STRENGTHS

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

EXPERIENCE

FinIQ Consulting India Pvt. Ltd.   May 2020 - June 2020
Summer Intern

· Developed a front-end platform using AngularJS for forex trading with history charts, exchange rates and along with a news portal and chatbot service
· Studied and analysed data cubes and OLAP for business intelligence using company platforms
· Studied technical analysis of market indices and option chain (equity derivatives)
· 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].

POSITIONS OF RESPONSIBILITY

Team Vector   August 2018 - April 2019
Developer   *ABU Robocon 2019*

· Assigned to build and code a quadruped robot and a wheeled robot with dynamic locomotive abilities
· The project was about an annual competition conducted by Asia Broadcast Union and consisted of a series of tasks that were supposed to be performed abiding the rules of the competition
· Two robots were created, one being an autonomous quadruped and the other a wheeled robot which had dynamic locomotive abilities

Team Vector   August 2019 - April 2020
Mentor   *ABU Robocon 2020*

· Mentored junior members of the team for designing two robots with holonomic drives
· The project was about a competition which would have the robots play rugby with 5 obstacles in the way
· Two robots were created out of which one was supposed to have throwing and kicking capabilities and the other was supposed to have catching and placing capabilities. Both robots had dynamic locomotive abilities owing to the holonomic drive design

PROJECTS & RESEARCH

The Galaxy Zoo Project   August 2019 - September 2020

· A galaxy morphology classification project using deep learning
· Studied different convolutional neural networks and their architectures
· Studied different architectural blocks to enhance performance
· Developed a network for vote fraction predictions of 37 galaxy features from the Galaxy Zoo decision tree
· Developed a network for classification of galaxies into 7 classes based on their morphologies

The EinsteinPy Project   March 2020 - April 2020

· Contributer to an open source community python package for general relativity
· **Contributions**:
· Addition of Reissner–Nordström metric: a static solution to the Einstein-Maxwell field equations, into the code (*PR: #462 Issue: #309*)
· Corrections in the Kerr-Newman and Kerr metrics classes
· Added calculations of event horizon and ergosphere for a Kerr-Newman blackhole (*PR: #472 Issue: #109*)

Astronomical Image Colorization and Super-resolution using GANs   August 2020 - Present

· Studied the inception of Generative Adversarial Networks and it's variants over the years
· Performed research on different techniques to colorize grayscale images and methods used in super resolution of images
· Wrote a literature review of the above techniques and their possible application to astronomical images
· Implemented a code in puppeteer to scrape the Hubble legacy archive
· Developed a prototype model for coloring images using GANs

Generative Adversarial Networks   June 2020 - Present

· Developed a python code to scrape data off Wiki-Art
· Implemented a variation of DCGAN to generate images of art based on different input datasets
· Implemented a different variation of DCGAN to colorize grayscale images

Time series analysis and prediction   March 2019

· Developed a recurrent neural network that analyses time series and predicts future time frame
· The project took into account a stock price, bitcoin exchange and other time series and could predict almost accurately the trend in prices
· Another project consisted of using pandemic data of active cases and visualising them as a time series and predicting the epi-curve for COVID-19
· An introductory project for LSTM networks which are extensively used in audio and sound analysis

Kuzushiji Recognition   September 2019

· A Kaggle competition to transcribe ancient Kuzushiji into contemporary Japanese characters
· Created a code to visualize the data and performed statistical analysis
· Built a model to recognize the handwritten text

Deep Writing   December 2019

· Created a RNN model with LSTM blocks to analyse books
· Trained the network over books from the same author and generated portions of new text

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

RELEVANT COURSES

Core Courses
Data Structures and Algorithms
Computer Organization
Operating Systems
Theory of Computation
Database Management Systems

MOOC
Deep Learning
Machine Learning
Computer Vision
Tensorflow and Keras

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

LANGUAGES

English *(Native or bilingual proficiency)*
Marathi *(Native or bilingual proficiency)*
Japanese *(Elementary proficiency)*

Hindi *(Native or bilingual proficiency)*
Sanskrit *(Limited working proficiency)*

INTERESTS

Deep Learning
Linear Algebra
Computer Vision
Differential Geometry & General Relativity

Machine Learning
Data Structures & Algorithms
Data Science
Quantum Physics