

# SHREYAS KALVANKAR

📍 Nashik, Maharashtra, India

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## EDUCATION

<b>Bachelor of Engineering (Computer Engineering)</b> K.K. Wagh Institute of Engineering Education & Research, Nashik	2017 - 2021 Overall GPA: 9.58/10
<b>Higher Secondary Certificate</b> HPT Arts & RYK Science College, Nashik	2017 Percentage: 87.07%
<b>Secondary School Certificate</b> Boys' Town Public School, Nashik	2015 Percentage: 94.4%

## TECHNICAL STRENGTHS

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

## EXPERIENCE

<b>FinIQ Consulting India Pvt. Ltd.</b> <i>Summer Intern</i>	May 2020 - June 2020
<ul style="list-style-type: none"><li>Developed a front-end platform using AngularJS for forex trading with history charts, exchange rates and along with a news portal and chatbot service</li><li>Studied and analysed data cubes and OLAP for business intelligence using company platforms</li><li>Studied technical analysis of market indices and option chain (equity derivatives)</li><li>Created a python module for stress testing CPU and memory as per user input using variable load calibration</li><li>Documented relevant codes and procedure</li><li>GitHub: <a href="#">CPU and Memory Stressing module</a> &amp; <a href="#">Forex Trading Platform</a></li></ul>	

## 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

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### **Team Vector**

*Developer*

August 2018 - April 2019

*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**

*Mentor*

August 2019 - April 2020

*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

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### **The Galaxy Zoo Project**

August 2019 - Present

- 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

- Contributor 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)

### **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

## Game Development using Unity

December 2018 - March 2019

- Created a first person shooter game in C# using Unity engine
- The project won the first prize at the Computer Graphics competition conducted at K. K. Wagh Institute of Engineering Education and Research under Computer Society of India

## RELEVANT COURSES

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### 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

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English (*Native or bilingual proficiency*)

Hindi (*Native or bilingual proficiency*)

Marathi (*Native or bilingual proficiency*)

Sanskrit (*Limited working proficiency*)

Japanese (*Elementary proficiency*)

## INTERESTS

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Deep Learning  
Linear Algebra  
Computer Vision  
Differential Geometry & General Relativity

Machine Learning  
Data Structures & Algorithms  
Data Science