Shreyas Bapat

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Education

IIT Mandi(Indian Institute of Technology Mandi)

Mandi, India

B.Tech. in Electrical Engineering

Aug. 2016 - PRESENT

- Got an award for valuable contribution in Technical Society at IIT Mandi (SnTC).

Skills

Programming Python, C/C++, MySQL, NASM, JavaScript, Tensorflow, Keras, Erlang, LaTeX, plotly, mayavi, matplotlib

Web Flask, PHP, HTML5, Dash

Languages English, Marathi and Hindi

Publications

Projecthiko 1.0 - The Voice and Internet Enabled Smart Home

IJETSR- ISSN 2394 3386

Author

Volume 4, Issue 6 | June 2017

- Deviced a very cheap and efficient way of making a home smart.
- Used Flask and HTML to create a web interface for handling the resources in home.
- Implemeted the Google Speech API to access the voice inputs of the user.

Experience

Programming and Data Structure Practicum (IC250)

IIT Mandi

Teaching Assistant

Feb. 2018 - Jun. 2018

- Under Dr. Padmanabhan Rajan

Poliastro - OpenAstronomy

Work from home

Software Development Intern

May 2018 - Aug. 2018

- Project Title: Webapp to visualise asteroid trajectories
- Worked in Dash, Plotly
- Restructured the whole plotting module and created two different backends for plotting. One using plotly and the other using matplotlib.

Projects

Intelligent Fabric Detection and Classification

IIT Mandi

Undergraduate Research

Dec. 2017 - Feb. 2018

- Implemented a Deep Learning Model to identify the fabric and classify it into different classes.
- Implemeted it using a Encoder with a CNN classifier, Siamese network for matching. The classification accuracy was 97 % on the test data
- Can be implemented in major online fabric stores to facilitate the process of picking a fabric without looking at it.
- Made Open Source: https://github.com/shreyasbapat/Fabric-Detection .

TCM and IRT Generator

IIT Mandi

Undergraduate Research

Nov. 2017 - Dec. 2017

- Created an Autoencoder neural network model on a dataset of original images and TCM, IRT of human palm. As these algorithms take a lot of time, AE is the workaround.
- Got almost accurate TCM and IRT of Palm images in a very less time.

Poliastro

India

Open Source Software Developer — *Nov. 2017 - PRESENT*

- Developed a new plotting class for the plotting module based on plotly. Improved the CI Integrations and developed various methods of plotting trajectories in plotting module.
- Had almost 40% contributions in the latest major release of poliastro (0.9.0)
- Release Notes v0.9.0: http://docs.poliastro.space/en/v0.9.0/changelog.htmlpoliastro-0-9-0-2018-04-25
- Project Link: https://github.com/poliastro/poliastro

Ayushman Bhava

Design Practicum, IIT Mandi

Lead Developer — *4th Semester - IC201P*

- Created a super smart medical vending machine with video conferencing with doctor, Payment gateway enabled for online payment.
- Used a Covolutional Neural Network for detecting the cash.
- Used Flask, Tensorflow-Keras, AJAX, HTML, CSS and JS
- Project Link: https://github.com/shreyasbapat/AyushmanBhavaGUI

Exoplanet Detection

IIT Mandi

Developer — *Oct. 2017 - Jan. 2018*

- Created a Machine Learning based prediction model which predicted the presense of Exoplanets on a star by the brightness data of that star over a long period of time.
- Used DFT and Dynamic Time Warping to make the data more readable.
- Project Link: https://github.com/STAC-IITMandi/Exoplanet-Detection

Orbital Simulator

IIT Mandi

Developer — *Oct. 2017 - Jan. 2018*

- Developed a simulator which computed the minimum distance of 500 different asteroids with the planet Mars for the next 5 years.
- This was used to predict the collision of asteroids with Mars.
- Used pyephem, astropy, openpyxl for the problem.
- Project Link: https://github.com/shreyasbapat/Orbital-Simulator

Webapp to visualise asteroid trajectories

India

Developer — *May 2018 - Aug. 2018*

- A web app based on dash by potly.
- Makes the lives of scientist easy. People do not need to know the complicated code base of poliastro. They can do everything using 2-3 clicks on a visual webapp.

Positions of Responsibilities

STAC (Space Technology and Astronomy Cell)

IIT Mandi

Co-ordinator — *Jun. 2017 - Jul. 2018*

- Organised Various sessions on Astronomy and AstroPhysics in IIT Mandi.
- Organised an ICTS Einstein Lecture at IIT Mandi.
- Held several positional astronomy hackathons.

Honors & Awards

2018	**5th Place**, Orbital Simulator - Inter IIT Tech Meet 2018	*IIT Madras, India*
2017	**1st Place**, Exploring the Interstellar - Technex IIT-BHU 2017	*Varanasi, India*
2017	**4th Place**, Eyes on the Sky - Inter IIT Tech Meet 2017	*IIT Kanpur, India*
2013	**2nd Place**, State Level Aryabhat Astronomy Quiz 2013	*Bhopal, India*
2012	**5th Place**, State Level Aryabhat Astronomy Quiz 2012	*Bhopal, India*

Presentation

Astronomy Code Camp - Astronomical Society of India

New Delhi, India

Mentor and Presenter — *Jun. 2018*

- Introduction to various scientific computing packages such as poliastr, astropy, pyephem to the participants.

6th International Conference on Engineering Technology, Science and Management Innovation (ICETSMI-2017)

IETE, Delhi, India

Presenter — *Jun. 2017*

- Presented the paper titled, "ProjectHiko1.O - The Voice and Internet Enabled Smart Home"