Shreyas Bapat

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EDUCATION

INDIAN INSTITUTE OF TECHNOLOGY MANDI
B.Tech. in Electrical Engineering
Expected Jun 2020 | Mandi, India
Cum. GPA: 7.34
- Awarded a Travel Grant to Attend Python in Astronomy 2019 in USA.

LINKS

GitHub:// **shreyasbapat**
LinkedIn:// **shreyasbapat**

CURRENT POSITIONS

PYTHON SOFTWARE FOUNDN.
Managing Member
- Voting Rights in PSF and Python Dev.

DEBIAN ASTRO PURE BLEND
Maintainer, Uploader
- Python Packages Related to Astronomy

EUROPEAN SPACE AGENCY
Org Admin, Mentor
- ESA Summer of Code in Space for EinsteinPy

COURSEWORK

Deep Learning and it's Applications
Pattern Recognition
Artificial Intelligence
Data Structures and Algorithms
System Practicum
Communicating Distributed Processes
Computer Organisation
Signals and Systems

SKILLS

PROGRAMMING
Python • C++ • C • Flutter
WEB DEVELOPMENT
Flask • Dash • CSS3 • HTML
Sphinx • Django
TOOLS/MARKUP
pytest • Docker • git • virtualenv
numba • • LaTeX • ReStructured Text

TALKS

PYTHON IN ASTRONOMY 2019
STScI, Baltimore, USA
- Python at the speed of light Simulating Relativity using EinsteinPy. - Looking at a black hole using Python.

PYCON INDIA 2018
HICC, Hyderabad, India
- Through Python to the Stars

AWARDS

KVPY Scholar 2016-17
Inter IIT Tech Meet - Bronze Medal

WORK EXPERIENCE

SIEMENS | Software Research Intern
Jun 2019 - Jul 2019 | Bengaluru, India
- Benchmarking performance of CycleGAN and MUNIT for Style Transfer Learning.
- Implementing Coverage guided Fuzzing for Deep Neural Networks.
- Development of modules for finding Coverage of a network and implementing GradCAM (Class Activation Maps).

SIEMENS | Software Research Intern
Dec 2018 - Feb 2019 | Bengaluru, India
- Using generatative models for test data generation. Exploring active learning for automatic data labelling.
- Implementing CycleGAN for style transfer of images.
- Implementing MUNIT for style transfer and comparison of both the approaches.
- Comparison of results between CycleGAN and MUNIT for same set of data.

PUBLICATIONS

PROJECTHIKO 1.0 - THE VOICE AND INTERNET ENABLED SMART HOME | Co-Author
June 2017 | IJETSR ISSN: 2394-3386
Cost Reduction in home automation. Used flask for handling backend. Implemented Speech Recognition.

PROJECTS

THE EINSTEINPY PROJECT | Lead Developer
Dec 2018 – Present | Mandi, India
- Author of a Python Library, EinsteinPy - a library for computations related to general relativity. Computations of Geodesics and Symbolic calculations of various tensors.
- Every module is tested before adding to the master branch with the test coverage 94%. API Documentation, user guide and other important details are made using sphinx and reSrtuctured Text.
- EinsteinPy is completely developed on a Linux system and is tested on Linux, Windows and OS X. It can be installed via conda, pip or apt!
- Multiple Continuous Integration frameworks are integrated to check linting, running unit tests, building docs, checking coverage and generating coverage report.

POLIASTRO | Lead Contributor
Dec 2017 – Present | Juan Luis Cano Rodríguez
- One of the leading contributors to a Python Library, poliastro - Astrodynamics in Python. Dedicated to problems such as orbit propagation, solution of the Lambert's problem, conversion between position and velocity vectors and classical orbital elements and orbit plotting, focusing on interplanetary applications.
- Important contributions in API design of plotting module, and addition of a frame of reference. Multiple bug fixes, and gave a talk on poliastro in PyCon India 2018.
- poliastro is usually tested on Linux and Windows.
- Added a bot for automation of support issues and wrote a wrapper around astroquery for querying NEOS data! Currently working on contributing a DASTCOM5 query module to a NASA sponsored 'sbpy' project.

K-SPACE MRI RECONSTRUCTION | Undergraduate Research
Feb 2019 - May 2019 | Prof. Aditya Nigam, IIT Mandi
- Achieved a very high PSNR, currently drafting paper for the results and algorithm.
- Reconstruction in k-space itself. No super resolution of images. This will make the MRI process a lot faster!
- Highly sub-sampled knee MRI data was used for the results. Packed the imaginary and real parts of Fourier space in a real value only.

POSITIONS OF RESPONSIBILITY

CO-ORDINATOR | Space Technology and Astronomy Cell
June 2017 - May 2018 | Mandi, India
Awarded as Best SnTC Coordinator for 2018-19.