Aryan Roy

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EDUCATION

Manipal Institute of Technology   **Manipal, Karnataka**
Computer and Communication Engineering, GPA: 8.29   *Expected Graduation: July 2023*

EXPERIENCE

IRIS-HEP Institute   **Remote**
IRIS-HEP Fellow   *Apr. 2021 – Aug. 2021*
- Worked on the build and distribution system for an open-source scientific-computation library.
- Developed a high-energy physics clustering Python library for multi-event vectorised Jet Finding.
- The adoption of the said library in one case led to a 20x wall time decrease and 25x throughput increase as compared to other alternatives.

Project MANAS   **Manipal, Karnataka**
AI Perception Head   *Feb. 2020 – Present*
- Developed modules for Geo-Tagging and Path-Length estimation for and under-development autonomous drone.
- Worked extensively on the coverage planner to completely cover a pre-defined area while avoiding obstacles.

TechQuila   **Manipal, Karnataka**
Author   *Oct. 2019 – Apr. 2021*
- Gathered information on the latest developments in the fields of Science and Technology.
- Wrote comprehensive articles covering any given topic in the sub-domain, while adhering to strict SEO optimization constraints.

PROJECTS

Pathfinders   *December 2020*
- Built a Python library with pathfinding algorithms implemented in C++ and binded by pybind11.
- Built a vectorized interface in python using Awkward Array for handling grid data.

Neural Style Transfer   *September 2020*
- A Generative Neural Network which extracts content and style from different images to create a composite image.
- Uses a pretrained VGG-19 to extract the content and style.

Talks & Presentations

PyHEP 2021   *6 July, 2021*
- Gave a talk titled - **'FastJet : Vectorizing Jet Finding'** on the design and development of a new Python library for data analysis in High Energy Physics.

TECHNICAL SKILLS

- **Languages** : Java, Python, C/C++, MATLAB, JavaScript

- **Tools** : Git, Cmake, ROS, GitHub Actions

- **Libraries** : TensorFlow, PyTorch, Sci-Kit Learn, pandas, NumPy, Matplotlib, pybind11, Awkward Array

ACHIEVEMENTS

- **Mahindra Rise Prize** : Part of the only undergraduate team to qualify for the finals.
- **Blue Sail Hackathon, 2019** : Runner Up