Aitik Gupta

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EDUCATION

Indian Institute of Information Technology, Gwalior   Madhya Pradesh, India
Integrated Bachelors and Masters in Information Technology (CGPA: 7.5)   *July 2018 – Expected May 2023*

St. Xavier's Sr. Secondary School   New Delhi, India
Central Board of Secondary Education (10th and 12th)   *August 2004 – May 2018*

Explorer Fellowship at Major League Hacking   Remote
Collaborated with Fellows all around the world over 3 hackathon sprints.   *February 2021 – April 2021*
1. SocioMark ↗ - A FARM stack social media platform assuring data authenticity using steganography
2. PoseRunner ↗ - Endless 3D runner game built with Three.js, integrated with PoseNet
3. VSCode-GitHub-Projects ↗ - An extension that brings GitHub's Projects into VSCode using GraphQL and Svelte

(more than 3.5K downloads ↗)

EXPERIENCE

Google Summer of Code   Remote
NumFOCUS, sub-org: Matplotlib | Proposal ↗   *June 2021 – August 2021*
- Revisited library's core module to migrate from font-first to text-first approach, virtually affecting 100% userbase
- Devised a per-glyph Font-Fallback algorithm, allowing text renderer to parse further families until a glyph is found
- Handled Font-Subsetting (valuable for CJK & commercial fonts) and unified most backends' TeX exporting layout

Machine Learning Intern   Remote
RapidQuest Solutions (previously Code Heroku)   *July 2020 – December 2020*
- Improved HPE workflow by 75% with HRNet - by avidly exploring researches and bringing them into production
- Improved and integrated native cross-platform C++ codebase with Android JNI wrappers, processing with TFLite
- Built a utility to improve patients' journey for clients based in United States, to animate 3D characters and their armatures using their body movements, also removing redundancy in angle measurements by 80%

TECHNICAL SKILLS

Languages: Python · JavaScript · C++
Developer Tools: Linux · Git · GitHub · VSCode · Anaconda · Jekyll
Frameworks | **Libraries**: FastAPI · Flask · GraphQL · MongoDB · ReactJS · Node.js | TFLite · Tailwind CSS
Domain Knowledge: Backend Engineering · Machine Learning · Computer Vision

PROJECTS

SocioMark ↗ | *FastAPI, ReactJS, MongoDB, OpenCV*   *April 2021*
- Devised the steganography module which embeds/decodes user_id (SHA) inside an image in the form of 256-bit binary digits, also implementing the logic behind when to encode/decode
- Defined and developed the backend endpoints, their routes, model architectures and database schema in FastAPI
- Continuously deployed the server ↗ (Heroku) and client ↗ (Netlify) with linter checks for every PR via GH-Actions

swi-ml ↗ | *Python Library, NumPy, CuPy, Matplotlib*   *February 2021*
- Authored a lightweight Python library (PyPI link ↗), implementing a subset of machine learning algorithms written from scratch - with a runtime switchable backend
- Interfaces single-core CPU accelerated backend as well as CUDA accelerated backend on multitude cores of GPU
- Pursued test-driven development to write object-oriented and clean modular code along with unit tests

E-RotaNet ↗ | *Python, TensorFlow, Flask, Computer Vision, Documentation*   *July 2020*
- Developed a modular end-to-end library to rotate images as per human-perception via regression/classification
- Used EfficientNet backbone with an iterative training strategy and a custom loss function, deployed using Flask
- Resulted in an 80% more lightweight, and 5X more accurate model than previous research in the domain

PUBLICATIONS

ActiveNet: A computer-vision based approach to determine lethargy ↗   Aitik G., Aadit A.
ACM India Joint International Conference on Data Science and Management of Data   *January 2021*