

# Aitik Gupta

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## EDUCATION

### Indian Institute of Information Technology, Gwalior

Integrated Bachelors and Masters in Information Technology (CGPA: 7.5)

Madhya Pradesh, India

July 2018 – Expected May 2023

### St. Xavier's Sr. Secondary School

Central Board of Secondary Education (10th and 12th)

New Delhi, India

August 2004 – May 2018

### Explorer Fellowship at Major League Hacking

Collaborated with Fellows all around the world over 3 hackathon sprints.

Remote

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 [4.2K downloads](#) )

## EXPERIENCE

### Google Summer of Code

NumFOCUS, sub-org: Matplotlib | Proposal

Remote

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

RapidQuest Solutions (previously Code Heroku)

Remote

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

ACM India Joint International Conference on Data Science and Management of Data

Aitik G., Aadit A.

January 2021