

# Aitik Gupta

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## EDUCATION

**Indian Institute of Information Technology, Gwalior**  
*Integrated Bachelors and Masters in Information Technology*

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*

## EXPERIENCE

### Software Engineer Intern

*Retrera Inc. | [Homepage](#)*

San Francisco, USA; Remote

*July 2021 – August 2021*

- Responsible for a responsive self-service **onboarding platform** with daily 2K arrivals using React, GraphQL, Flask
- Integrated internal Slack bots and Google Analytics to programmatically track **per-endpoint** conversions

### Google Summer of Code

*NumFOCUS, sub-org: Matplotlib | [Proposal](#) | [Blogs](#) | [Report](#)*

Remote

*June 2021 – August 2021*

- Revisited library's core module to migrate from **font-first** to **text-first** approach with a **caching layer**, along with **multi-font** embedding; affecting 100% workflows (virtually the complete 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), reducing output PDF/PS document sizes by 90%

### Software Engineer Intern

*RapidQuest Solutions | [Homepage](#)*

Pune, India; Remote

*July 2020 – December 2020*

- Improved and integrated native **cross-platform C++** codebase with **Android JNI** wrappers, processing with **TFLite**
- Built a utility to improve patients' journey by facilitating 100% online **physical rehabilitation**, animating 3D characters' **armatures** using body movements, removing redundancy in angle measurements by 80% withal

## TECHNICAL SKILLS

**Languages:** Python · JavaScript · C++

**Developer Tools:** Linux · Git · GitHub · pip · npm · VSCode · Anaconda · Jekyll

**Frameworks | Libraries:** Flask · FastAPI · GraphQL · MongoDB · ReactJS · Node.js | TFLite · Tailwind CSS

**Domain Knowledge:** Backend Engineering · Font/Text Rendering · Machine Learning

## PROJECTS

**SocioMark** | *[FastAPI](#), [ReactJS](#), [MongoDB](#), [OpenCV](#)*

*April 2021*

- Engineered the **steganography module** which embeds/decodes a unique user\_id (SHA) inside an image in the form of 256-bit binary digits, additionally 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**

**VSCode-GitHub-Projects** | *[TypeScript](#), [Apollo GraphQL](#), [Svelte](#)*

*March 2021*

- Launched an **extension** that brings GitHub's Projects into Visual Studio Code with more than **6K downloads**
- Established persistent communication by **polling** between WebView rendered by Svelte and GitHub GraphQL API

**swi-ml** | *[Python Library](#), [NumPy](#), [CuPy](#)*

*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**

## 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*