

MAHESH NATAMAI

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EDUCATION

Georgia Institute Of Technology

BS Computer Science *GPA: 4.0*

Expected Graduation: Dec 2024

Atlanta, GA

Relevant Coursework: Data Structures And Algorithms, Applied Combinatorics, Discrete Mathematics, Linear Algebra, Computer Organization And Programming (C & Assembly), Multivariable Calculus

WORK EXPERIENCE

Brains 4 Drones

Computer Vision Intern

Jun 2021 - Sep 2021

Plano, TX

- Led project systematically testing novel keypoint detection/description algorithms for simultaneous localization and mapping (SLAM) on autonomous drones.
- **Increased accuracy of keypoint matching algorithm by 15%** by varying standard algorithm.
- Developed custom algorithm to efficiently select photos for drone camera calibration from 5-dimensional point cloud, **reducing calibration times by ~ 10-20 seconds**.
- Simulated drone hardware pipeline for keypoint descriptor experiments using python and jupyter notebooks. Vectorized implementations using numpy for a **>10x speedup**. Utilized Robot Operating System (ROS) to interface with collected bag data.

Fiverr

Discord Bot Developer

Nov 2020 - Jun 2021

Plano, TX

- Seller with over **18k impressions**, **30+ clients**, and a **5.0 star rating** for Node.js discord bot development.
- Integrated 3rd party APIs (twitch, hosting services, custom servers, etc.), using MongoDB and MySQL.

PROJECTS

AI Powered Video Search *Python, Flask, Pytorch, React.js, Tailwind*

<https://getcry.tech>

- Architected web app leveraging OpenAI's machine learning models to search through video frames and audio transcripts with natural language prompts, enabling surveillance systems to be easily navigable.
- Used ANNOY index to efficiently compute similarity scores. Created custom video downloading, diarization, transcription, and embedding generation pipeline.
- Currently analyzing video to combat pain points in existing camera surveillance systems. Transfer learning existing models to improve accuracy on incident detection tasks.

Sign Language Classifier *Next.js, Python, Flask, Tensorflow*

<https://github.com/MaheshNat/Signify>

- Designed ML model and web app to enable members of the deaf and hard of hearing communities to communicate with those who do not understand ASL (American Sign Language) using machine learning.
- Leverages custom-trained convolutional neural network (CNN) built using Tensorflow to translate ASL.

Skill Bartering Platform *MongoDB, React.js, Node.js*

<https://github.com/MaheshNat/Menter>

- Architected during a hackathon as an education tool for skill bartering, i.e. allowing students to learn skills if they have something to teach in return.

RESEARCH/CLUBS

Undergraduate Researcher

Georgia Institute Of Technology

Jan 2023 - Present

Atlanta, GA

- Under Dr. Polo Chau: Creating an application for users to easily interface with inpainting and outpainting using stable diffusion. Using Python, Flask, Stable Diffusion, CLIP Segmentation, Next.js, and Tailwind.

Fullstack Engineer

Bits Of Good

Aug 2022 - Present

Atlanta, GA

- Developed platform for nonprofit "Motherhood Beyond Bars" enabling incarcerated women to communicate with their children and receive necessary products. Using Next.js and Firebase. Currently on project maintenance team performing feature additions to mostly completed projects.

SKILLS

Programming Languages:	Python Java JavaScript TypeScript Node.js HTML CSS
Web Frameworks/Libraries:	React/Redux Next.js Angular Flask Express.js Firebase
Data Science:	Numpy Pandas Tensorflow Matplotlib OpenCV
Misc:	MongoDB MySQL PostgreSQL Agile Git Linux