

# Ahmed Katary

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## EDUCATION

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

CAMBRIDGE, MA

*Bachelor of Science in Computer Science and Engineering*

2019-2023

## PROFESSIONAL EXPERIENCE

TEALSTONE CONSULTING

CAMBRIDGE, MA

Founder | Software Engineer

2024-Present

- Architected scalable backends using NodeJS, Django and GraphQL
  - Aria
    - Developed AI-powered sound management platform using ReactTS, deployed in 50+ stores across the US and Canada
    - NodeJS backend with 2 endpoints: one monitors 4.2MB of live music daily via SYB API and caches Spotify metadata; another recommends songs using mood, energy, and k-means clustering
  - Evolve Academy
    - Created endpoints for managing users, content, and submissions using Django, GraphQL, SQL, Firebase auth, and Celery for scheduled emails.
    - Increased students enrolled by 50%, enabled company to launch after 2 years
- Recruited and managed a team of 2 software engineers, where I prepared technical specifications for core functionalities. Used Trello, later JIRA to assign and check-off tasks.
- Managed 5 full customer lifecycles from acquisition to delivery. Led 20+ client intakes, converting 5. Delivered specs, hi-fi designs, quotes, and live-testing setups.

MIT HCIE LAB

CAMBRIDGE, MA

Undergraduate Researcher

2022-2023

- Second author on [Style2Fab: Functionality-Aware Segmentation for Fabricating Personalized 3D Models with Generative AI](#) paper where I was responsible for the technical implementation of the Stylization Nerf using pytorch and the segmentation algorithm, landed \$140,000 grant
- Optimized spectral clustering for mesh segmentation, achieving 6x speedup by converting mesh into a collapsing face graph in  $O(n)$  time, enabling ~12s processing for 100K+ surfaces.

INFOSYS

NEW YORK, NY

Quantum Machine Learning Intern

2021-2022

- Implemented the Quadvolution layer presented in [Quantum Convolutional Neural Networks](#) using PennyLane to implement a QCNN to classify car plate numbers from surveillance camera footage

## SIDE PROJECTS

RECEIPT SPLITTER

2023

- Used doctr to extract line items from receipt, built a simple GUI to assign line items to a label and compute total cost / label.

STARDUST: CLASH OF CLANS X MINECRAFT

2022

- Used MongoDB and Java based Spigot to create a minecraft server with clash of clans features: regenerating destroyed blocks using caching. Sifted through dozens of documentation to figure out how to create custom entities (like the zombies) by altering the decompiled native minecraft build.

MAS WEBSITE

2021

- Used ReactJS and a simple python server to create a website for the MIT MSA. Has 10K+ monthly visitors and is used to keep the community engaged and informed.

PLOYEM: CS + MATH EDUCATION PORTAL + WEBSITE BUILDER

2020

- Used Django + ReactJS + SQL to develop an educational platform where I can upload lessons, students can complete timed exams and I can view student performance analytics. Used to teach SAT and CS to over 50 students during Covid.
- Used podman to create sandboxed sessions for users connected to the server. Used ReactJS to create a smaller version of Jupyter Notebook supporting Python, JS, and Java.
- Used Regex and ASTs to create a mini-website drag-n-drop builder that allows users to add custom JS hooks to buttons