BENJAMIN YAM

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EDUCATION

Cornell University, College of Engineering, *Ithaca, NY*
Master of Engineering, Computer Science *May 2024 - Dec 2024*
Bachelor of Science, Major in Computer Science, Minor in Mathematics – Cum Laude *Aug 2021 - May 2024*

Relevant Courses: Deep Learning, Network, Natural Language Processing, Data Mining, Computer Vision, Robot Learning, Reinforcement Learning, Machine Learning, Computer Graphics, Database Systems, Artificial Intelligence, Functional Programming, Operating Systems, Computer System Organization, Probability and Statistics, Data Structure, Discrete Structure, Python, Entrepreneurship, Project Management

Awards: Dean's Honor List, NYS Academic Excellence Scholarship, Hope Scholarship Foundation Award

SKILLS

Languages: Cantonese (Fluent), English (Fluent), Mandarin (Proficient), Korean (Intermediate)
Programming Languages: Python, OCaml, Java, C, Javascript, TypeScript, C, C++, Go, SQL
Database: MongoDB, PostgreSQL, Firebase, Pinecone
Framework and Libraries: Express.js, React.js, Next.js, Flask, Bootstrap, Mongoose, Tailwind CSS
ML Tools: Tensorflow, SKlearn, Numpy, PyTorch, Keras, OpenCV, Pandas, Matplotlib, Scipy
Software: AWS, Git, XCode, AutoCAD, Inventor, Eclipse, Visual Studio Code, Jupyter, ClimpChamp, Blender, UTM, Bash, Zsh
OS: Linux, MacOS, Ubuntu, Windows **Game Development/Simulation:** Unity **DevOps:** Dockers, Jenkins
Robotics: ROS **Design Tool:** HTML, CSS

EXPERIENCE

CATchain *Ithaca, NY*
Software Engineer *Aug 2024-present*
- Created user registry platform and verification methods to verify carbon plan credibility
- Developed a Multi-Agent-based Retrieval Augmented Generation (RAG) system for carbon reporting, integrating external knowledge sources with LLMs, achieving higher accuracy in generated reports
- Optimized an existing blockchain-based carbon registry platform using React.js, Node.js, and Golang, leading to a 15% reduction in transaction latency.
- Developed and deployed smart contracts on Hyperledger Fabric, increasing the platform's operational efficiency by 25%.

DIAPER Nutrition *Ithaca, NY*
Frontend SWE *Aug 2024-Sep 2024*
- Create user platform to upload stools to be stored in MongoDB database for processing and analysis
- Analyzed over 10 GB of mobile app data, identifying key physical, biochemical, and microbial features of stool that impact infant GI health.
- Assist in implementing computer vision algorithms, CNN, and SIFT that improved the accuracy of feature identification in infant diaper images
- Developed machine learning models to predict infants' GI health, achieving a 25% improvement in predictive accuracy.

Headstarter AI *New York, NY*
SWE Fellow *Jul 2024-Sep 2024*
- Achieved 100+ users login in AI Study Flashcard app built with Gemini API, ClerkAPI, StrapeAPI
- Build a AI Resume App in a team of 4 with MERN stack becoming top contender out of 500+ teams
- Build weekly projects and meeting deadlines: landing page, pantry tracker, e-commerce site, AI Resume App, Rate my professor app

EMO America *Manhattan, NY*
Full Stack SWE intern *Jun 2024-Aug 2024*
- Developed and maintained fullstack web applications using html, css, js resulting in 20% increase in user engagement track with Google Analytics
- Collaborated/lead a cross-functional teams of 8 members, including designers and WDE to deliver high quality software solution on time
- Optimized website performance by reducing page load times by 35% through code refactoring and lazy loading
- Developed and launched 7 new features based on user feedback, resulting in 30% increase in user satisfaction scores

Cup Robotics Project Team Ithaca, NY
Software Developer *Oct 2021-Feb 2023*

- Collaborate with 70 team members (Mechanical Engineers, Electrical Engineers, Software Engineer) in the design, manufacture, and assembling of robotics-oriented projects (Chatbot integrated with ChatGPT, GUI using React.js, Overhead Vision System with Apriltag)
- Design GUI that let users access the vision system, Chatbot, Physical blocky, and connect robots. Design Chatbot GUI that uses speech recognition and stores context using React.js and Python.
- Decrease Overhead Vision System's x, y, and angle offsets by 80% and improve the algorithm for locating Apriltag

Math 1920 AEW Facilitator *Ithaca, NY*
Facilitator/ Teaching Assistant **_Aug 2022-May 2023_**
- Review and prepare Multivariable Calculus materials weekly for a class of 22 students per semester.
- Increase the median of the student body enrolled in AEW session scores a median above the general class by 10%

United Postal Service *Bayside, NY*
Sales Associate **_Jun - Aug. 2021_**
- Managed the CMS system in order to process 150 shipments from Amazon returns to shipping of high-values
- Organized 300 customers' mails/packages daily into respective mailboxes to ensure customer satisfaction.

United Building Sciences Limited *Manhattan, NY*
Quality Control Inspector Intern **_April-Jun. 2021_**
- Analyze building blueprints, and check fire control, ventilation, and water sprinkler systems within 4 buildings in Midtown and Queens to ensure structural safety

PROJECTS
Snack Searching Web App (Natural Language Processing & Text mining)
Snack recommendation app built with Python and Bootstrap framework implementing SVD, Jaccard, and Cosine Similarity to recommend snacks to user from a dataset web scraped from Yamibuy and Amazon
AI Blackjack Game (Reinforcement Learning & Artificial Intelligence & Game development)
Trained AI players on Reinforcement Algorithms and deep network built with Keras and Tensorflow to learn card counting with a win rate of 52% (beating average Blackjack win rate 42%)
Autonomous Driving (Reinforcement Learning & Deep Learning)
Trained car to drive on a mountain landscape on Microsoft Airsim environment using Deep Learning (PyTorch), Actor Critics PPO, and DFO on images from front camera
Man sitting on the Moon model (Computer Graphics)
Built Ray Tracer to render a human model on the moon terrain from NASA with Typescript
Fulltstack Spotify Clone (Software Engineering)
Using MongoDB, Express.js, React.js, Node.js, Cloudinary to build a fully functional music playing application
Fullstack ChatGPT Clone (Software Engineering)
Fully functional AI assistance with authentication, context history, payment with ReactJs, StripeAPI, ClerkAPI, AWS EC2
AI Resume Builder (NLP & Software Engineering)
With Nextjs (TypeScript), Strapi, PostgsreSQL, StripeAPI, ClerkAPI, and Neon I built a resume builder that uses Gemini AI to build one's resume from scratch
GPT-3 from scratch (Natural Language Processing & Machine Learning)
Using Tensorflow and PyTorch, I built a decoder-based architecture of the transformer and trained the model on 50 GB OpenWebText and optimized the model with self-attention and cross-entropy

LEADERSHIP
Hyatt Place *Flushing, NY*
Gallery Host Intern Lead **_Jun 2023-Aug 2023_**
- Assisted an average of 350 visitors per day with inquiries and provided information about the hotel.
- Assisted in maintaining accurate visitor logs and data entry, contributing to improved record-keeping efficiency.
- Successfully managed multiple tasks, such as attending to visitors, handling phone inquiries, managing kitchen staff, and assisting with event preparation, while consistently meeting deadlines

Cornell University *Ithaca, NY*
Resident Advisor **_Jan 2023-Present_**
- Led initiatives that celebrated cultural diversity, such as heritage month events, attended by an average of 30 residents
- Increased resident engagement in three separate resident communities through innovative programming and activities.
- Organized and led 4 events per semester, fostering connections among 1200+ residents and promoting a sense of belonging and inclusion