Ayush Ravi Chandran

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Education

University of Massachusetts Amherst Expected Graduation: May 2026

Bachelor of Science in Computer Science, Bachelor of Science in Mathematics GPA: 3.85/4.00

- **Coursework**: Algorithms, Networks, Distributed Systems, Graduate Machine Learning and Artificial Intelligence
- **Awards**: Chancellor's Scholarship (40% Tuition), Dean's International Scholarship, Flynn Research Scholarship, Dean's List
- **Undergraduate Teaching Assistant**: Supported discussions and grading for 200+ students in Scalable Web Systems and Probability; recognized with **Outstanding TA Award**

Experience

Software Engineering Intern September 2025 - Present

Center for Data Science and AI - University of Massachusetts Amherst *Amherst, MA*

- Built backend data pipelines (**PostgreSQL**, **S3**) to ingest, standardize, and store multi-organization salt marsh data for a **Massachusetts DEP**-funded initiative, supporting **100+** researchers across **20+** organizations
- Implemented reliable synchronization of multi-organization datasets to **NAS storage**, handling heterogeneous formats with schema mapping, incremental updates, and fault-tolerant batch processing
- Developed a multi-tenant web portal with role-based access control to manage **1,000+** weekly field records, improving data integrity and usability
- Prototyped a **computer vision** pipeline to digitize handwritten field forms, reducing manual transcription effort
- Built **containerized React** tools with interactive geospatial visualizations for reproducible deployment at Woodwell Climate Research Center, supporting external research partners

Software Engineering Intern - Unity HPC Cluster May 2025 - August 2025

Massachusetts Green High Performance Computing Center (MGHPCC) *Holyoke, MA*

- Engineered low-latency telemetry pipelines in a **Linux**-based **HPC** environment to process **12+** months of cluster activity, enabling real-time monitoring and faster incident response
- Optimized **SQL** queries and **data indexing** strategies to accelerate SLURM log analysis by 80%, enabling faster anomaly detection across **10.9M+** job records
- Applied **unsupervised clustering** (DBSCAN) to identify 63,000+ underutilized A100 GPU hours, uncovering **$120K+** in wasted compute resources
- Collaborated in **Agile** sprints to build CI/CD pipelines with GitHub Actions and **pytest**, conducting code reviews and automating testing for monitoring services

Head of Technical Operations June 2021 - May 2025

Instilt Educate (Nonprofit) | edu.instilt.com *Remote*

- Led an engineering team of 10 through sprint planning and backend redesign (Express.js, PostgreSQL), automating scheduling workflows and saving 10+ hours per week
- Built GitHub-based automation workflows integrating the website, database, email, and Slack to automate volunteer onboarding, interview scheduling, and status notifications for a 300+ member organization.

Projects

Poker Bot | *Python, PyTorch, NumPy* | poker-gui.vercel.app April 2025

- Built a **Deep Q-Network** reinforcement learning agent in **PyTorch** to play Heads-Up Limit Texas Hold'em
- Designed probabilistic game-state encoding using Monte Carlo win-rate estimates, improving action selection
- Trained agent via **self-play** with experience replay, achieving **4th/23** ranking and demonstrating emergent strategies like optimal folding

RouteAble | *TypeScript, NestJS, PostgreSQL, React Native, PyTorch* | github.com/RouteAble November 2023

- Launched a full-stack app in **36 hours** to crowdsource images of inaccessible locations, enhancing navigation for users with mobility challenges
- Developed a **PostgreSQL** backend with Dockerized **ML models** for obstacle detection and similarity, achieving **92%** accuracy in identifying accessibility barriers
- Received **Most Impactful** Award and a $2,000 prize at the UChicago Winter Tech Showcase '24 for real-world accessibility impact
- Won **Best Use of GitHub** at HackUMass for novel full-stack architecture, awarded by **Major League Hacking**

Skills

Languages: Python, JavaScript, TypeScript, SQL, C, C++
Frameworks: React, Next.js, PyTorch, TensorFlow, Express.js, NestJS, Pandas, NumPy, scikit-learn
Developer Tools: Git, Docker, Kubernetes, AWS (S3, Lambda), PostgreSQL, Linux, Redis, SLURM, Grafana, pytest