Hanna Jiang

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Education

University of Massachusetts Amherst

MS in Computer Science   Expected: 2025
- GPA: 4.00/4.00
- Awards: Baystate Scholar (100% tuition waiver), Graduate Teaching Assistant
- Relevant Coursework: Distributed and Operating Systems, Machine Learning, Natural Language Processing, Game Theory, Game Programming, Data Visualization, Software Engineering

University of Massachusetts Amherst

BS in Computer Science   Expected: 2024
- GPA: 3.94/4.00
- Awards: $12,800 Sherwood Delaney Scholarship, $7,200 John and Abigail Adams Scholarship
- Organizations: ACM Machine Learning Club (Marketing Coordinator), Rewriting the Code
- Relevant Coursework: Artificial Intelligence, Operating Systems, Database Design, Algorithms, Data Structures, Object-Oriented Programming, Probability and Statistics, Linear Algebra, Multivariable Calculus

Experience

Amazon Web Services

Software Development Intern   Jun. 2024 – Aug. 2024
- Delivered Java throttling package for EC2 Elastic Load Balancing to automate 40+ SEV2 throttling ticket resolutions weekly.
- Leveraged AWS services (Lambda, API Gateway, CloudWatch) to suggest API call rate and make M2M changes 30 seconds.
- Deployed 5 real-time dashboards using CloudWatch and Grafana, enabling 10+ teams to monitor performance and reliability.

Lab for Advanced Sleep Software and Sleep, UMass Amherst

Software Engineering Intern   Jun. 2023 – Aug. 2023
- Developed a Streamlit dashboard for real-time sleep visualization, increasing efficiency by 30% for a team of 10 researchers.
- Built interactive visualizations using Matplotlib and Plotly and Pandas, uncovering trends that informed actionable insights.
- Improved data quality by implementing SQL validation checks in REDCap, reducing participant data entry errors by 25%.

Lab for Internet-scale Distributed Systems, UMass Amherst

Research Assistant   Jun. 2023 – Aug. 2023
- Tuned NVIDIA's multi-resolution hash encoding in the Ringmaster framework using C++ to enchance efficiency 20%.
- Optimized Instant Neural Graphics Primitives (NGP), achieving a 20% performance boost for real-time 3D rendering.
- Generated fully masked 3D renders from 13s iPhone videos using Instant NGP with low-resolution input reconstruction.

Neuro Learning and Performance Lab, UMass Amherst

Research Assistant   Dec. 2021 – May 2022
- Engineered machine learning models PyTorch and TensorFlow to analyze eye-tracking and multimodal datasets.
- Performed statistical analyses in MATLAB using Bayesian inference, revealing novel patterns in rapid decision-making.
- Coordinated and managed over 30 participants to collect high-quality data, ensuring the reliability of research outcomes.

Projects

TuneLink — *React Native, MongoDB, Expo, Express.js, Swagger UI*
- Built a cross-platform mobile app with React Native and Expo, enabling seamless music sharing on iOS and Android.
- Developed RESTful APIs using Express.js and MongoDB, ensuring scalable and secure data handling for content.
- Implemented a personalized recommendation algorithm, enhancing user engagement and content discovery.

Schedule Builder Website — *JavaScript, Python, Next.js, MongoDB, Flask, React*
- Developed a full-stack schedule builder, collaborating in an Agile team and improving project delivery by 20%.
- Designed and implemented a React front-end and integrated MongoDB for real-time data storage, enhancing scalability.
- Implemented to generate non-overlapping course schedules based on user preferences, enchancing user experience.

OverMath — *Unity, C#, UI, Adversarial AI, Pathfinding AI*   Oct. 2024 – Dec. 2024
- Designed and developed a Unity-based game inspired by OverCooked, integrating mathematical challenges.
- Implemented advanced pathfinding AI to manage customers, enhancing game dynamics and player engagement.

University Buy and Sell Website — *JavaScript, HTML/CSS, PouchDB, Express.js*
- Built a full-stack marketplace app with Google authentication, leveraging PouchDB for secure and offline-first data storage.
- Designed and implemented Express.js API endpoints, improving efficiency and reducing data processing time by 20%.
- Designed mockups in Figma, streamlining the design process and aligning the development with user needs.

Technical Skills

- **Languages:** Python, Java, C/C++, JavaScript, TypeScript, HTML/CSS, SQL, R, Go, Shell Scripting
- **Libraries:** Pandas, PyTorch, TensorFlow, NumPy, Matplotlib, OpenCV, Scikit-Learn, Keras
- **Tools and Frameworks:** AWS, Azure, Google Cloud Platform (GCP), ReactJS, NodeJS, Flask, Django, Git, Docker, Kubernetes, Rest API, GraphQL, FastAPI