

Jonathan Wang

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Education

Emory University

Atlanta, GA

Bachelor of Science in Computer Science

GPA: 3.97

Bachelor of Science in Applied Mathematics and Statistics

Expected May 2026

Relevant Coursework: Machine Learning, Data Structures and Algorithms, Analysis of Algorithms, Computer Architecture, Database Systems, Computer Science Practicum, Mathematics of Data Science, Numerical Analysis, Linear Optimization

Projects & Research Experience

Undergraduate Research Assistant, Emory Graph Mining Group

April 2024 – Present

Emory University

Atlanta, GA

- Conducted research on **HyperGraph Neural Networks** under the guidance of **Professor Carl Yang**, developing an **unsupervised model** to optimize patient embeddings using **pretraining** and **transfer learning**, enhancing **disease prediction accuracy** in **small-sample EHR datasets**.
- Contributed to the **MedAssist** project, leveraging **large language models** to improve medical record comprehension and analysis.
- Co-authored research on **HyperGraph Neural Networks**, submitted to **AIME Journal** as the **third author**. Additionally, **MedAssist** research was accepted at **WWW 2025**, also as the **third author**.

Transformer Model Reimplementation | *Python, PyTorch, Attention*

October 2024 – December 2024

Emory University

Atlanta, GA

- Built a **Transformer model** from scratch to explore its potential in NLP tasks.
- Implemented the model and applied it to **text classification** and **natural language generation** tasks.
- Compared the performance of the custom-built model against **mainstream libraries**, gaining insights into scalability and optimization.
- Deepened understanding of **Transformer architecture**, **attention mechanisms**, and neural network training.

Open-Unmix Reimplementation | *Python, PyTorch, Audio Processing*

November 2024 – December 2024

Emory University

Atlanta, GA

- Reconstruct an **OpenUnmix neural network model** from scratch for advanced **audio source separation**, focusing on applications in **AI-driven music analysis**.
- Trained the model for **musical instrument separation** tasks, leveraging **deep learning** and **audio spectrogram processing**.
- Enhanced expertise in **LSTM architectures**, **convolutional neural networks (CNNs)**, and **neural network training pipelines** for real-world datasets.

EagleRating System | *Java, Maven, SpringBoot, MongoDB, React, AWS EC2, Git*

Jan 2024 – Apr 2024

- Led a **5-member Agile team** to develop a web application for Emory students to rate campus facilities
- Built a robust backend with **SpringBoot**, facilitating efficient user interactions for rating, bookmarking, and commenting.

Technical Skills

Languages: Python, Java, C, ARM Assembly, HTML/CSS

Technologies: Machine Learning, Deep Learning, Data Analysis, Full-Stack Web Development

Models & Algorithms: Attention, Transformer, GNN, CNN, LSTM, Naive Bayes, SVM, KNN, Random-Forest

Databases & SQL: MySQL, PostgreSQL, MongoDB, Redis

Developer Tools & Frameworks: Git, Docker, PyTorch, Visual Studio, PyCharm

Libraries: pandas, NumPy, Matplotlib, Scikit-Learn, BeautifulSoup

Honors

Emory University Datafest Competition

2024

Best Team and Insight Award

- Analyzed performance metrics for CourseKata, an online data science platform to improve course outcomes.

Dean's List of Emory College of Arts and Sciences

Fall 2023 – Fall 2024