Ju Young (Justin) Yang

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Aspiring AI Researcher/Software Developer committed to exploring AI solutions and delivering innovative products. Strong understanding of machine learning algorithms and data analysis, and demonstrated ability in experimental analysis, quantitative research, and software development.

Duke University — B.S Computer Science
graduated December 2023

Relevant Coursework: Database Systems, Design/Analysis of Algorithms, Intro to AI, Data Structures and Algorithms, Computer Systems, Server Side Web Applications, iOS Mobile App Development, Discrete Math

Skills:

Languages	Python, SQL, Java, C, Javascript, Typescript, Ruby, Swift
Frameworks & Libraries	Pytorch, Tensorflow, Pandas, OpenAI, Flask, React, Next.js, Node.js, Express
ML & AI	Regression, Clustering, Classification, Transformer, Markov Models, Reinforcement Learning
Database	MongoDB, PostgreSQL, XML, SQLAlchemy
Tools & Platforms	Git, AWS, Docker, OAuth2.0, Shell (Bash/Unix)

EXPERIENCE

ML Engineering Intern, POZAlabs
May 2022 - August 2022
Seoul, Republic of Korea

▸ Conducted ablation study for paper published in NeurIPS 2022 (ComMU: A Dataset for Combinatorial Music Generation) to investigate the effect of *'Track-Role'* metadata in combinatorial music generation; evaluated its distinctiveness compared to human composed samples through Amazon Mturk involving 100+ composers.

▸ Led company-wide meetings with cross-functional agenda and developed internal commodity templates for a streamlined knowledge sharing across the organization.

Defense Communication Systems Specialist, Korea Army Headquarters
June 2020 - December 2021
Seoul, Republic of Korea

▸ Implemented and managed wire and IP/TCP systems to ensure seamless inter-departmental communication between Army, Navy, and Air Force branches; oversaw national communication networks to meet the operational needs of military units.

RESEARCH & PUBLICATION

Recurrent Transformer Research at ColAI
Current
Transformers, RNN

▸ Researching advanced methodologies to enhance the efficiency and extend the context length of Transformer models. Focusing on integrating diverse architectural frameworks, including RetNet, Mamba, and RoPE.

MID-FiLD: MIDI Dataset for Fine-Level Dynamics (AAAI 2024)
August 2023
Symbolic Music Generation, SVM

▸ Performed invitational research on music generation task implementing fine-level dynamics with ML researchers at POZAlabs.

▸ Conducted exploratory data analysis and observed success rate of 80% on valence mood classification task using Support Vector Machine. Accepted to AAAI 2024.

PROJECTS

Not Uber
November 2023
Python, Graph Theory, Search Algorithms

▸ Simulated a ride-sharing service modeling Manhattan with a graph-based model (50,000 nodes, 2,000 passengers, and 200 drivers) and conducted runtime analysis and desire-data assessment.

▸ Achieved linear-time matching strategy using event-driven decision algorithms: A*, Dijkstra's, Floyd-Warshall.

Earth Street Journal
October 2023
Flask, MongoDB, Fine-tuning, Beautiful Soup

▸ Developed web-application to enhance accessibility of environmental news through web scraping and structured summarization.

▸ Fine-tuned GPT model with tailored training and validation dataset to enhance data consistency and summarization quality.

Bulk Buy Buddies
October 2023
Next.js, Flask, MongoDB, Google Maps API

▸ Crafted web-application to simplify bulk purchase decisions by matching Costco customers who wish to split purchased items.

▸ Incorporated custom backend API with Next.js frontend and implemented Google Maps API for location-specific services.