

# Ju Young (Justin) Yang

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Aspiring Software Engineer committed to delivering innovative products and solutions through technology. Strong understanding in computer science fundamentals, and demonstrated ability in full-stack development, problem solving skills, and cross-functional collaboration and communication.

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

Frameworks & Libraries

ML & AI

Database

Tools & Platforms

Python, SQL, Java, C, Javascript, Typescript, Ruby, Swift

React, Next.js, Node.js, Express, Flask, Pytorch, Tensorflow, Pandas, scikit-learn

Regression, Clustering, Classification, Markov Models, Reinforcement Learning

MongoDB, PostgreSQL, XML, SQLAlchemy

Git, AWS, Docker, OAuth2.0, Shell (Bash/Unix)

## EXPERIENCE

Research Assistant, ColAI

Jan 2024 - Current

Implementing advanced methodologies to enhance the efficiency and extend the context length of Transformer models.

Organizing internal meetings to devise and integrate diverse architectural frameworks, including RetNet, Mamba, and RoPE.

ML Researcher, POZAlabs

May 2023 - August 2023

Performed invitational research on music generation task implementing fine-level dynamics.

Conducted exploratory data analysis and observed success rate of 80% on valence mood classification task using Support Vector Machine. Accepted to AAAI 2023.

ML Engineering Intern, POZAlabs

May 2022 - August 2022  
Seoul, Republic of Korea

Spearheaded 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  
Republic of Korea

Managed wire and TCP/IP systems to ensure seamless inter-departmental communication between Army, Navy, and Air Force.

## PUBLICATION

MID-FiLD: MIDI Dataset for Fine-Level Dynamics (AAAI 2023)

August 2023

Symbolic Music Generation, SVM

Developed and evaluated MIDI dataset tailored for music generation for fine-level dynamic control. Trained Transformer model with dataset annotated with 4 meta-data including CC#1 of modulation wheel.

## 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.