Chan Park

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Education

Duke University — Durham, North Carolina
Bachelor of Science - Computer Science (AI/ML) — *August 2020 - May 2024*
Minors - Economics, Philosophy — *GPA: 3.76*
Courses: *Algorithmic Trading, Algorithms, Artificial Intelligence, Computer Architecture, Data Structures, Database Systems, Discrete Math, Econometrics, Graduate-level Data Science, Linear Algebra, Machine Learning, Multivariable Calculus, Operating Systems, Probability*

Technical Skills

- **Languages & Frameworks**: C, C#, Java, Javascript, Python, Scheme, SQL | Angular.js, Express.js, Flask, React.js, Vue.js
- **Tools & Libraries**: AWS, Blender, Figma, GCP, Git, Jenkins, Postman, Unity | Matplotlib, Pandas, PyTorch, Scikit, Three.js

Work Experience

- **Capital One** — Richmond, Virginia
  Software Engineering Intern — *June 2023 - August 2023*
  - Streamlined feedback collection process for 16,000+ monthly users by pioneering Vue feedback form with search capabilities
  - Spearheaded submit and search RESTful API development with features like schema validation, pagination, and flexible query-building modules, enabling scalable aggregate queries and reduced adaptation time for other applications
  - Architected **AWS OpenSearch** indices for storing form data and rectified a critical bug in the security headers across all East AWS OpenSearch indices in the process, mitigating a setback that had delayed progress by 1+ week for 4 other teams
- **Duke University** — Durham, North Carolina
  Research / Teaching Assistant — *August 2022 - April 2024*
  - Orchestrated weekly one-on-one Office Hours and conducted weekly recitations of 25+ students for courses "Data Structures and Algorithms" and "Design and Analysis of Algorithms," aiding comprehension and fostering algorithmic development
  - Optimized **hyperparameter search** for gradient descent based **assisted learning** algorithm using **AutoML** in **PyTorch**
- **Cigna Health** — Bloomfield, Connecticut
  Application Developer Intern — *May 2022 - August 2022*
  - Integrated **Google Analytics** into **Angular.js** fitness app of 20,000 monthly users and created **Cloudwatch** dashboards for real-time AWS instance/database monitoring, reducing annual issues with overloaded EC2s, ELB, and RDS by 60%
  - **Multithreaded** a Python **web scraper** in BeautifulSoup translating the organization hierarchy of Cigna's 70,000 employees into a visual, with information stored in a SQLite database, amplifying performance efficiency by over 10-fold
  - Revamped Cigna's **Virtual Reality** Meditation app with a social option including multiplayer capabilities like avatar selection, hand-tracking, and cross-device object interaction with **Unity**, **C#**, Meta Avatars SDK, and Oculus Integration SDK. Presented at Cigna's booth at the Fall 2022 Grace Hopper Conference
- **University of California, San Diego** — San Diego, California
  Research Intern — *June 2019-August 2019*
  - Wrangled and plotted current event dataset in Python, uncovering notable inconsistencies and multi-month gaps, and implemented **Principal Component Analysis** from scratch to analyze **Time Series** data by simplifying the data through its eigenvectors and assimilating it into one dimension, thus enabling comparison of multidimensional data points

Projects

- **Online Poker**: Devised an online poker game with **Vue** frontend, **Express** backend, and **MongoDB** database that has Gitlab **OIDC** login, profile creation and editing, **Socket.io** room creating and joining, Gitlab Runners **CI/CD**, **Kubernetes** load balancing and container management, **Playwright** E2E testing, **RBAC** with admin/player roles, and accurate poker gameplay with immersive UI (March 2024 - April 2024)
- **Trading model**: Built an algorithmic trading model that integrated a BERT-based sentiment analysis NLP model fine-tuned on past financial data that weighted current news data with momentum indicators and a Trinomial-tree based options trading strategy that combined momentum trading with volatility trading using Delta hedged straddles (September 2023 - December 2024)
- **Personal Website**: Innovated a visually immersive **Three.js** website resembling a cafe to introduce myself and showcase personal projects; employed Blender to personally design, mesh, and render all objects featured (December 2022 - July 2023)
- **Spotify Notion Integration**: Programmed **Notion Integration** with **Flask** backend and **SQLite** database using the **Spotify API** to, upon authentication, generate Notion databases for viewing and sorting tracks in user's playlists based on artists, popularity, or Spotify-assigned audio features like danceability, speechiness, etc (August 2022 - July 2023)
- **Mini-Amazon**: Engineered e-commerce web app using vanilla **Javascript** frontend, Flask backend, and **PostgreSQL** database accessed by SQLAlchemy where registered users could buy and/or sell products according to inventory space, user balance, and product price (September 2022 - December 2022)
- **Proximity**: Led Agile team as Tech Lead for an **Okta-integrated** web app displaying optimal in-person workdays using coworker data, architected connectivity between **DynamoDB**, Express.js, and React.js, and added functional testing with Microsoft Playwright (May 2022 - August 2022)
- **Mindful Garden**: Created React website promoting mental health with interactive features for user meditation, mood journaling, mindful breathing, and sleep scheduling. Awarded Best Hack for promoting Health & Wellness at HackDuke 2021 (October 2021)