

Education

University of Colorado Boulder – Boulder, CO

12/2024

Master of Science in Computer Science with Concentration in Data Science and Engineering (GPA: 3.967)

- Relevant experiences: Course Manager & Facilitator of Machine Learning courses

Pohang University of Science and Technology – Pohang, South Korea

02/2019

Doctor of Philosophy in Industrial and Management Engineering

Data Science Experiences

Netmarble – Seoul, South Korea

Jan. 2019 – May 2022

Data Scientist, User Analytics Team

- **User Behavior Analysis for Strategic Decision-Making:** Analyzed millions of game user behaviors using SQL (BigQuery) and Python to provide actionable insights for product decision-making and strategy alignment.
- **Data Visualization & Reporting:** Continuously provided insights to stakeholders (product, engineering, and marketing teams) by designing and maintaining dashboards in Looker and automating data pipelines with Airflow.
- **Key Metrics Design & Tracking:** Developed an in-game economy index incorporating inflation to analyze economic trends in mobile games and support strategic decision-making, providing the index and insights through dashboards. Also designed dashboards to track key metrics such as retention rate, conversion rate, sales, and other game behavior indices.
- **Revenue Forecasting:** Built CNN-based and Prophet-based revenue forecasting models for new mobile games, offering actionable insights to product teams regarding underlying prediction drivers.
- **Data Storytelling & Analysis:** Led root cause analysis using regression modeling, uncovering issues with new-user incentives and increasing buying rates by 26% through actionable recommendations.
- **Clustering & Recommendations:** Derived user behavior segments and developed a clustering-based item recommendation system for a global mobile game, achieving a 5% increase in sales growth rate.
- **Collaborative Problem Solving:** Partnered cross-functionally with data engineering, product, software engineering, and QA teams to align data analysis results with business goals and technical feasibility. Successfully deployed a recommendation system in a live mobile game in a highly collaborative environment.
- **A/B Testing:** Conducted in-depth A/B testing with t-tests to validate the effectiveness of recommendation system and to optimize it.
- **Operations & Maintenance:** Maintained end-to-end machine learning pipelines, leveraging Git, CI/CD, and unit testing to ensure robustness in model monitoring and dashboard updates.

FINRA – Washington, DC (Remote)

May 2024 – Aug. 2024

Data Science Intern, FINRA NExT Internship Program

- **Data Analysis & Insight Generation:** Leveraged advanced NLP techniques and Large Language Models (LLMs) (Claude-3.5-haiku) to strengthen regulatory processes, achieving over 80% F1 score in extracting key information from public offering documents.
- **Synthetic Data Generation:** Utilized LLMs and few-shot learning to create synthetic datasets, enabling robust performance assessment of NER and relationship extraction models.
- **Data Preprocessing & Optimization:** Leveraged Python (BeautifulSoup) for text data preprocessing and applied multi-threading to enhance data extraction efficiency.
- **Collaboration & Recognition:** Partnered with cross-functional teams to deliver actionable insights and recognized as one of six outstanding interns from a cohort of 80 for exceptional contributions.

Skills

- **Data Analysis & Visualization:** SQL, Looker, A/B Testing, Statistical Analysis, Root Cause Analysis
- **Programming & Modeling:** Python, XGBoost, Scikit-learn, Prophet, NLP, LLMs (Claude-3.5, GPT-3.5), FAISS, BeautifulSoup, Regression Modeling, Multi-threading, CNN
- **Cloud Platforms & Deployment:** Azure (OpenAI API), Google Cloud Platform, CI/CD, Git, Airflow
- **Machine Learning & AI:** Recommendation Systems, Clustering, Forecasting, Predictive Modeling, Deep Learning
- **Operations & Communication:** Unit Testing, Cross-Functional Collaboration, Data Storytelling