

## 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.
- *Churn Prediction:* Built **Deep Learning, XGBoost**, and **GLMs** churn predictions models of mobile game users using **Scikit-learn, Tensorflow, Keras**, and **PyTorch**, providing actionable insights to product teams.
- *Segmentation & Recommendations:* Derived **user segments** based on their behaviors and developed a **segment-based item recommendation system** for a global mobile game with **BigQueryML**, achieving a **5% increase** in sales growth rate.
- *Data Storytelling & Analysis:* Led **root cause analysis** using regression modeling with **Scikit-learn**, uncovering issues with new-user incentives and increasing **buying rates by 26%** through actionable recommendations.
- *Revenue Forecast:* Built **Prophet-based revenue forecasting models** for mobile games, offering actionable insights to product teams regarding underlying prediction drivers.
- *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.
- *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*

- *Applied NLP & LLMs:* 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*