






Seungmin Baek

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EDUCATION

Vanderbilt University – School of Engineering, Nashville, TN

Aug 2022 – May 2024

M.S in Computer Science – GPA: 3.54 / 4.00

Relevant Coursework: Deep Learning, Foundation of Machine Learning, Deep Learning: Representational Learning, Advanced Artificial Intelligence, Design & Analysis of Algorithm, Social Network Analysis, Machine Learning for Dynamical System, Artificial Intelligence, Advanced Statistics for Data Science, Linear Algebra

Indiana University – School of Engineering, Bloomington, IN

Aug 2013 – May 2019

B.S in Computer Science

- Innovative Idea Tank – *Co-Founder & Vice President* 2018 – 2019
- Korean Technology Exploration Club – *President* 2017 – 2018

TECHNICAL SKILLS

Programming Languages: Python, SQL, Java, R, MATLAB, C#

Tools & Frameworks: PyTorch, TensorFlow, Scikit-learn, Azure, Docker, Git, Cosmos DB, Linux, Windows Server, .NET, Microsoft Excel

Core Skills: Natural Language Processing (NLP), Generative AI, AI-based Recommendation, Data Analysis & Engineering, APIs, Cloud

PROJECTS

Rephraser | Python, PyTorch, Natural Language Processing (NLP), BERT, APIs, Git

Spring 2024

@ Vanderbilt University – *Individual Inquiry*

- Developed a Transformer architecture in PyTorch and created a Large Language Model (LLM) that detects toxic comments with 93% accuracy and rephrases them into positive-toned message with advanced performance
- Resolved the absence of positive-toned comments data by generating appropriate messages corresponding to toxic comments using the GPT-3.5 model via OpenAI APIs

Novice & Experts | Python, PyTorch, Generative AI – VAE, Research, Git

Fall 2023

@ Vanderbilt University – *Team Project*

- Developed a Supervised Variational Autoencoder (S-VAE) architecture using PyTorch to create image generator models capable of producing images and mapping latent space distribution
- Visualized latent representations of S-VAE models to investigate the hypothesis that perceptual expertise arises from differences in latent representation and conducted analysis to compare disparities between novice and expert models

WORK EXPERIENCES

DANAL – Bundang, South Korea

Mar 2020 – Apr 2022

Associate Data Analyst

- Developed and implemented a comprehensive Fraud Detection System, incorporating advanced risk management algorithms to identify and mitigate various types of fraudulent phishing patterns
- Constructed and deployed an Apache web server for PAYCOIN, a cryptocurrency service application, and facilitated secure online transaction by developing RESTful APIs with Flask
- Designed the database architectures for launching payment services, including LG-PAY, account transferring, and virtual accounts
- Enhanced the creditworthiness assessment for a mobile phone payment service with the three major Korean telecommunication carriers by analyzing payment rates, and transaction history
- Visualized daily reports to monitor occurrence rates of suspicious transactions, consumer debt ratios, server storage capacity, and average server response times by integrating SQL Server with Tableau

TMON – Seoul, South Korea

May 2017 – Aug 2017

Data Analyst Intern

- Developed a personalized recommendation system and achieved a 190% increase in Click-Through Rate (CTR) and a 560% improvement in Conversion Rate (CVR)
- Automated the production of daily evaluation reports on recommendation strategies by implementing SQL Job Scheduler with a code to analyze key metrics, including CTR, CVR, and Gross Revenue (GR)

CERTIFICATES

- Neural Networks and Deep Learning – DeepLearning.AI (Coursera)
- Machine Learning – Stanford University (Coursera)