Joowon Kim

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EDUCATION

University of Illinois at Urbana-Champaign *May 2021*
Bachelor of Science, Computer Science and Economics *GPA: 3.4/4.0*

SKILLS

Skills: Python, C++, Javascript, Statistics, Numerical Analysis, Machine Learning, Data Science, Full Stack Development
Technologies: PyTorch, Pandas, NumPy, Django, PostgreSQL, Linux, AWS, Git, Jupyter Notebook
Coursework: Algorithms and Models of Computation, Linear Algebra, Regression Analysis, Statistics, Computer Architecture, Data Science, Machine Learning Artificial Intelligence, Econometrics

EXPERIENCE

Software Engineering Intern, *Pure Storage* *May 2020 – August 2020*
- ⇒ Constructed data engineering module in Python to convert low-density data to high-density in FlashArrays
- ⇒ Designed a new row compression algorithm that squashes real-time data stream from Pure Storage hardware
- ⇒ Achieves 100% lossless compression and effectively reduces up to 97% on 10,000,000+ rows of information
- ⇒ Reported as primary author for the algorithm, which will outline invention disclosure and patent application

Machine Learning Researcher, *ECE Department* *September 2020 – Present*
- ⇒ Working as an undergraduate researcher in Sanmi Koyejo's lab on machine learning models for cognitive science
- ⇒ Researching relations between cognitive intelligence and brain measures using hierarchical mixture-of-experts
- ⇒ Optimizing sparsely-gated mixture-of-experts layer to generate more robust models of predictions

Data Science Intern, *State Farm* *August 2019 – December 2019*
- ⇒ Solo-built entire LDA-simulation pipeline in Python for team to utilize, improving future research efficiency
- ⇒ Integrated various clustering methods to optimize runtime for >18GB files and ~400 different vector combinations
- ⇒ Congregated different claims processes based on agglomerative clustering, vector distance, shingling

Software Engineering Intern, *State Farm* *May 2019 – August 2019*
- ⇒ Constructed corporate data analytics portal using Javascript, Python, Django, PostgreSQL, JSON, and pandas
- ⇒ Developed analysis tool in software, increasing the efficiency of data search functionality by 100%
- ⇒ Redesigned information storage in PostgreSQL database to improve analysis for ~1000 data-layered maps

Director of Project Management, *CS 196 at UIUC* *August 2018 – December 2019*
- ⇒ Directing all 35 project managers for the 210 computer science students in the CS 196 Honors course
- ⇒ Installed new and rigid grading system and hiring/interview methods, while keeping an effective 1:7 student-PM ratio

PROJECTS

NCAA March Madness Prediction *Present*
- ⇒ Utilizing PyTorch, pandas, and NumPy to predict the best performers for the 2020 NCAA Tournament
- ⇒ Implementing multi-layered classification neural network using Kaggle data to identify the result of a matchup

AWS Email Bot *July 2019*
- ⇒ Built a Python script using libraries like smtplib to develop a subscription-type email bot on AWS EC2 instance
- ⇒ Implemented structural methods supporting constant runtime, making user data processing easier and more efficient

MISCELLANEOUS

Placed 5th Internationally for HOSA Creative Problem-Solving event at ILC
Placed 1st Nationally for Academic Games League of America in On-Sets event
Love playing basketball or golf, losing in fantasy sports, going to social events, and gaming