Remy Kim

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Education

University of Pennsylvania — Philadelphia, PA
GPA: 4.00 / GRE: 161(V) 170(Q) 4.5(W) / MS Candidate in Computer and Information Science — *Aug 2022 - May 2024(Exp.)*
Relevant Coursework: Stochastic Models, Applied Machine Learning, Big Data Analytics, Cryptography

Seoul National University — Seoul, South Korea
GPA: 3.75 / BS Electrical & Computer Engineering and BA Business Administration (Dual Major) — *Mar 2016 - Aug 2022*
Relevant Coursework: Linear Algebra, Probability and Stochastic Processes, Estimation Theory, Control Theory, Data Science Capstone, Data Structure, Computer Organization, Financial Management, International Financial Markets, Intro to Accounting

Skills Summary

- **Languages:** C/C++, Python, SQL, MATLAB, R, Javascript, Solidity, Linux Scripting
- **Tools:** PyTorch, Hugging Face, Scikit-learn, MongoDB, ElasticSearch, Docker-Compose, Django, AWS CLI, Git, Jira, Hardhat

Work Experience

Kokoa Finance Labs — Seoul, South Korea
Quantitative Researcher Co-op — *Jan 2022 - July 2022*
- For 3 DeFi protocols (Kokoa, Kokonut and Stakehouse) of aggregate TVL $200M+, conducted quantitative analysis on asset default risks focusing around Kokoa Stable Dollar's collateral risks and price volatility across the ecosystem's DEXes
- Modeled pricing models of liquidity providing(LP) tokens and the consequent protocol valuation model that considers the cost for bootstrapping LP Tokens dubbed "Cost of Liquidity" (Cost of Capital equivalent of On-Chain Liquidity)
- Worked on implementing a controlling mechanism for adequate protocol interest rate and stability fee of each collateral in the collateral-backed stablecoin platform; Used PID controller and Value-at-Risk framework

Allganize, inc. — Seoul, South Korea
Machine Learning Engineer Co-op — *June 2021 - Dec 2021*
- As a ML engineer in a B2B NLP startup, designed and implemented Key-Value Extraction Suite (a solution recognizing meaningful key-values from client's raw input documents) using LayoutXLM model and AWS instances
- Leading a team of two, built industry-specific sentiment analysis solution for finance and cosmetics that was later deployed on the company's wider congitive search product and successfully closed two PoC contracts with Japan's largest conglomerates
- Improved service latency of all language model inference 54% by migrating the inference pipeline to Tensorflow Extended

Air Force Operations Command — Republic of Korea Air Force
Staff Sergeant of Command/USAF Liaison — *Sep 2017 - Aug 2019*
- As Staff Sergeant of Command, organized/lead tactical telecommunication and supply support across eleven airbases during two Command Post Exercises (UFG 2018 and KR 2019) and interpreted combined meetings with 7th Air Force (USAF)

Research Projects/Extracurricular

Operations Research Group by Prof. Minhwan Oh — Seoul National University
Research Intern — *Mar 2021 - July 2021*
- Worked on enhancing reinforcement learning agent's exploration capacity in simplified MDP settings using dropout methods and stachastic weight averaging, improving upon bootstrapped DQN(Osband 2016) and SWAG (Maddox 2019)
- Wrote a comprehensive survey paper on exploration techniques used in deep reinforcement learning literature, ranging from intrinsic motivation methods to model-based exploration (ex. MOReL) and distributional RL (ex. Quantile Regression)

SNU FIXERS (Fixed Income/Derivatives Club) — Seoul National University
Co-Founder — *Mar 2017 - Dec 2020*
- Lead group research on pricing interest swap, asset swap and currency swap and how swap products handles risks that are highlighted in ISDA Master Agreement terms
- Conducted deep-dive into Korea Treasury Bond Currency Swap Structure (a currency swap matching foreigner's KTB demands and Korean institution's dollar bond demands with adequate hedging structure) focusing on amendments to Credit Support Annex that includes top-up trigger and tri-party agreement structures

PyTorch Implementation of Agent57 (DeepMind paper(2020) on Atari games) — *Aug 2021 - Feb 2022*
Continual Learning of Mujoco Robot Manipulation Tasks using LwF (max of 3 tasks) — *Jan 2021 - Jul 2021*

Additional Information

- **Interests:** Applying automated decision making in finance(e.g. RL), Dynamical systems, Fat tail risks, Avid tennis player
- **Honors and Awards:** Changgang Foundation Scholarship (Dec 2020), National Humanities and Social Sciences Scholarship (Dec 2020), 2016 KNC Champion (Largest inter-varsity English debate championship)
- **Languages:** English(Native), Korean(Native), Mandarin(Conversational)
- **Favorite Books:** Antifragile, How Not to Be Wrong, Narrative and Numbers, The Network State, Chaos: Making a New Science