MINUK LEE
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EDUCATION

Columbia University, School Of General Studies — New York, NY

Bachelor of Arts in Mathematics

Columbia University Dean's List(Fall 2022, Fall 2023), *GPA: 3.57*

***Course Highlights**: Machine Learning, Advanced Algorithms, Stochastic Modelling, Probability Theory, Modern Analysis I&II, Modern, Algebra I&II, Complex/Fourier Analysis*

WORK EXPERIENCE

Quantitative Strategist - ABRA — Oct 2022 - Present

- Analyzed potential P&L and risks for delta-neutral strategies within CEX/DEFI, specializing in cryptocurrencies.
- Designed and developed algorithmic trading models, executive dashboards, and execution algorithms, facilitating deployment on trading capital exceeding $100 million.

Research Intern - Columbia University, Department of Computer Science — May 2023 - April 2024

- Undertook a comprehensive literature review to summarize previous approaches and potential methods on the topic of detecting and exploiting equivalent state-action pairs in MDPs to enhance sample efficiency in RL methods.
- Validated our approaches through logic and mathematical analysis, conducted experiments to affirm their effectiveness, and synthesized the findings into a research paper.
- Advisors: Professor Tony Dear and Professor Scott David Kelly.

Research Intern - UCLA Institute for Pure and Applied Mathematics — Jun - Aug 2022

- Investigated novel approaches for converting time-dependent optimization-constrained ODEs/PDEs into tridiagonal systems, enabling parallel solving using the Multigrid method(TriMGRIT), in collaboration with Lawrence Livermore National Laboratory (LLNL).
- Utilized LLNL's supercomputer, Ruby, to evaluate our method's performance, summarized methodologies and results in a report paper, and delivered a presentation to UCLA faculties and industrial sponsors.
- Academic Mentor: Dr. Jean-Michel Maldague, Sponsoring Mentor: Dr. Rob Falgout

Program Team Assistant Manager - All-M, South Korea — Jul 2015 - Dec 2019

- Worked on a multiplayer action game's client/server to develop new features, fix bugs, and improve performance (multithreading, session/channel/login servers, custom 3d game engine). Game Name: KRITIKA
- Developed prototype games (Unreal Engine 4) for external partners (ex. Tencent).

LEADERSHIP/EXTRACURRICULAR ACTIVITIES

Participant - Columbia Mathematical Modeling Contest — Jan - Feb 2022

- Proposed a sustainable incineration system to improve the poor refuse management system in NYC.
- Formulated predictive mathematical models to calculate transition, maintenance cost, and environmental impact of the proposed solution.

Member - Columbia University Hacking for Humanity — Sep - Nov 2021

- Developed a non-profit business proposal to increase NYC recycling rates and address homelessness through a sharing-economy platform focused on recycling.
- Conducted analysis of NYC recycling and garbage statistics, along with surveys of local residents, to assess our business's viability and financial feasibility.

SKILLS & INTERESTS

Technical Skills: Python, PyTorch, C++/C# Programming, Network Programming, Latex, Windows API, Sql
Language: Korean (Native), English (Fluent), Spanish (Conversational)
Interests: Latin dances, Chess, Cooking, Bowling