

Yuanhao JIANG

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INTRO

- Seeking for a better learning environment and inspirations, I chose to move from mainland China to Hong Kong, then to Edinburgh, UK
- Being a math and statistics student, I also have great interests in the fields of computer science and graphic design, and I self-taught game development, web development and so on. Currently I am focusing on Machine Learning, Reinforcement Learning and related areas.

EDUCATION

- **The University of Edinburgh** Scotland, UK
Mathematics and Statistics (BSc Hons) *Sept 2020 - Present (graduate in 2024)*
 - ***Grades:***
Year 1: First Class, average grade 92% *Year 2: First Class, average grade 90%*
Year 3: First Class, average grade 88% *Year 4: Predicted First Class*
 - ***Prizes and Medals:***
2021/22: School of Mathematics College Vacation Scholarship
2022/23: James Ward Prize for distinguished performance in the Degree Examinations in Mathematics & Statistics 3
2022/23: Arthur Erdelyi Prize for distinguished performance in the Degree Examinations for Mathematics 3
- **Hong Kong Baptist University** Hong Kong
BSc *Sept 2019 - May 2020*
 - ***Grades:***
Year 1: cGPA: 3.72/4
 - *Withdrew after year 1 and then came to the University of Edinburgh*

RESEARCH

- ***Score-Based Diffusions & Numerical Methods for Stochastic Differential Equations***
May 2023 - Present
 - Apply innovative approaches, especially the Leimkuhler-Matthews discretization method, for solving SDEs, to both the perturbation process and denoising process. Compare sample quality and training efficiency with traditional numerical SDE solvers including the Euler-Maruyama method, the Milstein method, the stochastic Runge-Kutta method and so on
 - Embed the diffusion coefficient function in perturbation SDE with spatial information to allow potentially higher perturbation flexibility
 - GitHub repository will be released in due course
- ***Mathematics of Reinforcement Learning with Applications to Quantitative Finance***
Jun 2022 - Sep 2022
 - Construct environment for our quantitative finance scenario.
 - Implementing various algorithms including Actor-Critic, REINFORCE, and PPO to solve our problem.
 - Train, adjust and compare different algorithms for efficiency and effectiveness.
 - **GitHub repository:** github.com/Yuanhao-JIANG/RL-in-QF

SKILLS

- **Core softwares:** Python, R, Java, Haskell, Git, HTML, CSS, \LaTeX , C, Processing, MIPS assembly
- **Tools & Frameworks:** VIM, PyTorch, LWJGL, Bootstrap
- **Platforms:** Linux (Arch Based), MacOS, Windows
- **Languages:** English, Chinese (Mandarin)

EXPERIENCE

- **Careers Service, the University of Edinburgh** Part time
• ***WeChat Assistant*** *Sept 2021 - Sep 2022*
 - In charge of the management of the WeChat account and related student and alumni groups
 - Searching and examining opportunities and events across UK and China and post to student and alumni groups
 - Contact various employer to ensure the accuracy of the opportunities provided

PROJECTS

- **Light weight game engine:** Tech: Java, LWJGL, OpenGL, GLSL and so on.
GitHub link: github.com/Yuanhao-JIANG/Java_game_engine
- **Translation with RNN/Transformer:** Tech: Machine Learning (RNN, Transformer), Python, PyTorch. GitHub link: github.com/Yuanhao-JIANG/ml-translation
- **Handwriting recognition with CNN structure (LeNet):** Tech: Machine Learning (CNN), Python, Pytorch. GitHub link: github.com/Yuanhao-JIANG/ml-handwriting-recognition
- **Light weight parkour game written by Processing:** Tech: Processing.
GitHub link: github.com/Yuanhao-JIANG/Parkour_game