Zebin Guo

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Education Background

The University of Hong Kong (HKU) Sep. 2020 - Present
Major: Computer Science **Minor:** Mathematics **Expected Degree:** Bachelor of Engineering
GPA: 3.55/4.3 **Standard Test:** GRE 326 TOEFL 104

Publication

Zebin Guo (2022), Stock Price Predictions Using Machine Learning Models, *Proceedings of the 2022 International Conference on Artificial Intelligence, Internet and Digital Economy (ICAID 2022)*, ISSN 2589-4919. doi: 10.2991/978-94-6463-010-7_30 2 Dec. 2022
URL: https://www.atlantis-press.com/proceedings/icaid-22/125977082

Internship Experience

Software Development Engineer in Test, **Alibaba Inc.** Jun. 2023 - Aug. 2023

- Developed a test case automation platform using React-based Ant framework at the front end, interface capturing at the back end using Spring, and MyBatis for management
- Participated in the front-end development of the mobile Taobao automated competition platform and version comparison platform, using React-based Ice3 framework and Ant design components for development
- Wrote user cases with Kotlin using the DinamicX framework developed by Tmall Group, found and reported 10+ defects in the container frame

C++ Software Engineer Assistant, **Shining 3D Technology Co., Ltd.** Jun. 2022 - Aug. 2022

- Completed the visualization platforms for papers and course exercises in geometry using Qt visual library and C++, and performed demo development on topics like surface parameterization and reconstruction
- Realized real-time interaction and off-screen rendering for each use case, and provided text and video tutorials
- Participated in the development of automatic tooth alignment software by C++ to realize functions of adaptive acquisition of multiple bracket parameters to generate a coordinate system and convert it into an oral space coordinate system

Software Development Engineer in Test, **BranD New Data Technology Co., Ltd.** Jun. 2021 - Jul. 2021

- Conducted software testing for the company platform, completed black box testing by filling out the software test case table, and used Java reflection mechanism to write unit test cases for white box testing

Project & Research

Physical-based Character Animation in Fluids Sep. 2022 - Present

- Employed a differentiable world model to simulate states of fluid and solid agents, and utilized back-propagation property of neural network to acquire agent's control policy with a trained general model
- Compared two ways to learn a world model: a supervised-learning approach using an MDN-RNN model based on a vorticity-based solver, and an unsupervised-learning way to learn from a pre-defined potential energy
- Aimed to introduce the traits of differentiability and neural network of world models into the less explored fluid simulation field, enabling a fast and robust simulation of fluids and solid agents inside.

Leader of H Award Team, American Collegiate Mathematical Contest in Modeling Sep. 2022 - Feb. 2023

- Controlled the direction and ideas of problem-solving during the competition, made overall arrangements for the work of the team members, supervised the work of the team members in real-time
- Optimized and used the population competition model and mathematical methods such as analytic hierarchy process to predict and analyze the short-term and long-term growth trends of different types of vegetation under various soil, pressure, rainfall, and other conditions in the five regions, and add multiple factors such as pollution and soil erosion to optimize the prediction process.

- Proposed solutions for each influencing factor after obtaining reasonable results

Research on the ability of the ZeroGen Language Model Based on Zero-Shot Learning in the Direction of Evaluation in HKU NLP Lab Sep. 2022 - Dec. 2022

- Investigated the performance of the PLM fine-tuning language model ZeroGen developed by HKU NLP Lab in the direction of Question Answering, compared it horizontally with other evaluation metrics (Mauve, etc.) to explore the ability of the language model in the direction of evaluation

Research on Stock Price Predictions Using Machine Learning Models Jan. 2022

- Used a variety of ML models (LR, NN, LSTM, etc.) to predict Netflix stock prices, analyze and optimize the training results
- Published paper as the independent first author

Skills

Programming Language: Python, C++, Java, React, JavaScript, etc.

Professional Knowledge: computer graphics, natural language processing, machine learning, quantum theory, optimization, calculus, linear algebra, game theory, etc.

Engineering Ability: Proficient in CMake building, Maven plug-in, and React-based Ice and Ant framework for front-end development