**Ruikang Wu**

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**EDUCATION**

**M.S. in Data Science, University of California- Los Angeles**  Sep 2022 – Jun 2023

In coming Fall

**B.S. in Computer Science, Rutgers University** Sep 2017 – Jan 2022

Overall GPA: **3.92/4.0**

**PUBLICATION**

* Hu, Y., **Wu, R.,** & Gu, Y. (2021, April). Action-Improved Actor-Critic Tracking for Accurate Object Tracking. In Journal of Physics: Conference Series (Vol. 1903, No. 1, p. 012010). IOP Publishing. **(Co-Leading-Author)**

**RESEARCH EXPERIENCE**

**Generation and Prediction of Personalized Music List** Dec 2020 - Mar 2021

**Advisor: Associate Prof. Mark Vogelsberger, Massachusetts Institute of Technology**

* Studied machine learning and data science algorithms systematically, including Scikit-learn, TensorFlow, Keras, and PyTorch, applying different recurrent neural networks (LST, GRU) and generating adversarial neural networks.
* Learned the fundamentals of GPUs and TPUs and used Hadoop, Apache Spark for processing big data.
* Designed and developed a software-based RNN algorithm for Spotify based on the user's historical data, including actions and historical music lists, to generate a personalized recommendation music list.

**Action-Improved Actor-Critic Tracking for Accurate Object Tracking** Dec 2020- April

***Institution: Rutgers University***

* Improved the scale estimation of Actor-Critic Tracking (ACT) and proposed the Action-improved ACT(AIACT) model based on the basic framework of ACT and added a new element to the bounding box of the ‘Actor’ model to change the aspect ratio.
* Modified and optimized the transition function of the Markov Decision Process.
* Compared with the original algorithm with only three dimensions, which is difficult to deal with the problem of scale transformation, we added a dimension to make it better to deal with scale transformation.
* The proposed AIACT model achieves 0.646 of success rate and 0.912 of precision rate on the OTB dataset, which is 10% improvement compared with the original ACT model. Furthermore, the proposed method can solve the scale estimation problem of ACT effectively by the proposed improved action space and is more suitable for actual tracking scenes.

**PROJECT EXPERIENCE**

**User Portrait Data Analysis** Feb 2022 – March 2022

**Project background:** For an e-commerce platform, the user portrait is built to understand the basic attributes of users

• Use SQL to establish user labels for user basic attributes, consumption power, user value, etc.

• Use Python to integrate user labels and form user portrait label table

**Project results:**

• To intuitive understanding of the user by analyzing population attributes, statistics, and geographic information through a user attribute-based analysis

• Conclude 25-40 is the main platform users’ group

• Conclude the source channels of platform users are relatively average

• Conclude that there are more users in east China, and the majority of users are female, accounting for 68%

**User Behaviors Data Analysis** Jan 2022 – Feb 2022

**Project background:** For an e-commerce platform, this project is mainly responsible for analyzing users' payment behavior and optimizing the payment process.

• Use Python for data cleaning

• Analyze user payment behavior path by using funnel model

**Project results:**

• The research found that the "bookmark" button would basically not produce payment behavior, so it is suggested to weaken the display strength of shopping cart and "bookmark" function

**Logistics Distribution Center Project** Apr 2021 – Aug 2021

**Project background:** To improve the delivery efficiency and user experience, we designed and developed an application to realize completely contactless delivery during the epidemic.

* Served as team leader, Java back-end development engineer, and product manager, working with multidisciplinary team members.
* Designed and developed an MVC framework, the purpose is to reduce the coupling of the overall development. In the front-end part, technology stacks including HTML, CSS, Javascript are used, and ajax is used for verification information, such as verifying the legitimacy of the username and password input.
* Used bootstrap to beautify the page layout. The layer is a front-end display frame used to show the loading process while the user is waiting.
* Built MySQL database based on the logic of one-to-many, many-to-one, and many-to-many (built-in table is used), and to prevent SQL injection, the backend used PreparedStatement for the query.

**WORKING EXPERIENCE**

**Assistant Consulting Analyst, Deloitte, Shanghai** Sep 2021 – Nov 2021

**Project background:** According to Deloitte Industrial Chain Prosperity Evaluation Criteria (DICPEC), all the industrial chains are divided into four levels. Multiple indicators are collected and analyzed to evaluate the prosperity of a certain industrial chain based on DICPEC.

* Used quantitative analysis to explain changes in the prosperity index, multiple indicators include gross profit margin, sales, operating expenses, operating costs are taken into consideration.
* Designed and developed the current analysis framework with an optimized top-down framework that reduced the coupling of codes, enabling future iterations to become more convenient.

**PROFICIENCY**

**Programming & Software:** Java, JavaScript, Python, HTML, CSS, MySQL, Hive, Tableau

**Libraries:** NumPy, SciPy, Pandas, Scikit-Learn, TensorFlow, Scrapy, Matplotlib, Seaborn, PyTorch

Familiar with common data structures and algorithms

Knowledge of operating system, computer network, computer composition principle, TCP/IP network protocol

**GRE**: 336 [V166(97%)+Q170(96%)]+3.5(37%) [11/15/2021]