Ziniu Hu

Education

2014–present **Bachelor**, *Electronics Engineering & Computer Science*, Peking University, Beijing, China.

- Research Assistant in the System Research Lab, Institute of Software, Peking University, under the guidance of Professor Xuanzhe Liu.
- Internship at Microsoft Research Asia, Machine Learning group, under the guidance of Researcher Jiang Bian.
- Major GPA: 3.57

Project

2017–present **A Deep Learning Framework for News-oriented Stock Trend Prediction**, [3].

- This is the intern project in Microsoft Research Asia(MSRA).
- Three principles for imitating the learning process of human beings facing with chaotic financial news are abstracted, which are: *sequential content dependency, diverse influence, and effecient learning*.
- Based on the principles, a hybrid attention networks model with self-paced learning mechanism is proposed.
- This project is under the submission of WSDM 2018.

2017–present **Dynamic Testing For Android Apps Using Reinforcement Learning**.

- Model the dynamic testing procedure as a Partially Observable Markov Decision Process.
- Use several static analysis tools to extract instructive features for decision making.
- The policy gradient method is used to optimize a pairwise-ranking model, as the policy.

2016–2017 **User Behavior Analysis Of Inter-App Navigation**, [4].

- A background data collection Android app for field study is implemented by my own.
- Based on the log analysis, several time consuming navigation processes are found.
- A one-class classification model is built to analyze users' navigation patterns.
- This project is under the submission of TMC 2017.

2016–2017 **Optimize Release Strategy for Android Apps**, [2].

- Conduct an in-depth analysis in the release history of 17820 Android apps.
- Reveal several important characteristics of update intervals and their effects.
- Build a classification model to optimize the release opportunity to gain user adoption.

2015–2016 **Android Application Crawler & Deep Link Generator**, [1].

- An UI structure based approach is used to identify pages to build the Android app crawler.
- The crawler learns the transition graph at first and then trigger further crawling processes.
- The intent series are recorded for replay and deep links generation.
- This project has been accepted in ICSE 2017.

2015–2016 **Mario AI Using Neuroevolution Algorithm**.

- Train an AI to play Mario game on NES simulator.
- Implement the NEAT algorithm by my own for model training.

2014–2015 **Greedy Snake Combat AI Using Alpha-beta Pruning**.

- The AI plays a double-player combat game on a platform called botzone.
- Traditional alpha-beta pruning algorithm is implemented by my own with positive performance.

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Awards

2015 Honorable Mention of Interdisciplinary Contest In Modeling.

2014 Wu Si Scholarship of Peking University.

Skills

Programming JAVA/ANDROID, PYTHON, C/C++, MATLAB.

Tools LaTeX, Git, Machine Learning Library (scikit-learn, TensorFlow), NLP Toolkit(NLTK, Gensim)

Interests

Machine Learning, Reinforcement Learning, related Mathematical Theories, and other applications such as Data Mining, NLP, Recommendation System and Software Engineering.

Publications

Yun Ma, Xuanzhe Liu, **Ziniu Hu**, Dian Yang, Gang Huang, Yunxin Liu, and Tao Xie. Aladdin: automating release of android deep links to in-app content. In *Proceedings of the 39th International Conference on Software Engineering Companion*, pages 139–140. IEEE Press, 2017.

Sheng Shen, Xuan Lu, and **Ziniu Hu**. Towards release strategy optimization for apps in google play. In *The Ninth Asia-Pacific Symposium on Internetware, Shanghai, China*, 2017.

Ziniu Hu, Weiqing Liu, Jiang Bian, Xuanzhe Liu, and Tie-Yan Liu. Listening to chaotic whispers: A deep learning framework for news-oriented stock trend prediction. *submitted for WSDM*, 2018.

Ziniu Hu, Yun Ma, Qiaozhu Mei, and Jian Tang. Roaming across the castle tunnels: an empirical study of inter-app navigation behaviors of android users. *submitted for TMC*, 2018.