

Hao Wu

☎ (+1)217-721-4705

✉ haow11@illinois.edu

📖 <https://github.com/CN-AlbertWu96>

1901 N Lincoln Ave, Urbana, IL, 61801

EDUCATION

University of Illinois at Urbana-Champaign

Urbana, IL

M.S. in Computer Science (thesis-based), GPA: 4.0/4.0

Aug. 2018 – May 2020(Expected)

Courses: Natural Language Process, Introduction to Data Mining, Applied Machine Learning, Machine Learning, Data Mining Principles, Deep Learning, Reinforcement Learning.

Shanghai Jiao Tong University

Shanghai, China

B.S.E. in Information Engineering GPA: 3.67/4.0

Sept. 2014 – June 20

PUBLICATION

Mastering Complex Control in Multiplayer Online Battle Arena Games with Deep Reinforcement Learning

○ Accepted by the 34th AAAI Conference on Artificial Intelligence. AAAI 2020.

WORK EXPERIENCE

Tencent, AI Platform Department

Shenzhen, China

Reinforcement Learning Engineer Intern, Tensorflow/ Horovod/ Docker

May – Aug. 2019

- Implemented and trained the reinforcement learning algorithm A3C and PPO with deep value and policy network for agent to play MOBA games. The winning rate reached ~99.81% against professional players.
- Simplified model size to be ~10MB and it can be integrated in mobile devices for online testing. [[news](#)]
- Designed action mask to reduce training cost and implemented dual-clipped PPO for policy optimization.
- Designed ablation study to compare the effect of action mask, unit attention and LSTM components.

Shanghai Jiao Tong University, IIoT Research Center

Shanghai, China

Research Assistant, JavaScript /MySQL/ Python3

Mar. 2016 – June 2018

- Designed a novel academic information system with hierarchical fields information of papers based on Microsoft Academic Graph with papers (points ~150K) and fields and subfields (clusters ~1.2K).
- Built an async tile map loading system, supporting 11 levels, 4K tiles by using CodeIgniter and Leaflet.js.

SELECTED PROJECTS

Learning Named Entity Tagger under Constrained Budget

Mar. – June 2019

- Implemented a fine-tuning training process with BiLSTM in name entity recognition task, which reaches 86.7 F1 score (with ~8% annotation) compared with 68.38 in unsupervised learning and 74.99 in distantly supervised training on CoNLL03 dataset.
- Implemented ActiveNER with pool-based active learning to bootstrap state-of-the-art toolkit AutoNER.

TTG: A Topic Tree Generator with Weak Supervision

Jan. – June 2018

- Proposed a multi-level topic-building classification method, combining term embedding and adaptive spherical k-means to construct topic tree in a recursive process.
- Evaluated TTG model on DBLP dataset (~18GB) with 4 levels topic trees and 100+ subtopics. The result of relation accuracy score is 0.67 and term coherency score is 0.69, beating HLDA with 0.27 and 0.44 and HPAM with 0.11 and 0.17 for relation accuracy score and term coherency score.

Online Field Study Platform Design

June 2017 – Feb. 2018

- Developed Online Field Study Platform independently in full stack to evaluate the influence of users' social identification on making decision. The front-end was built by React, React Router, NodeJS, Webpack and Antd react UI library. The backend was built by Flask and MongoDB.

SKILLS

- **Programming Languages** Python, C++, C, JavaScript&Html, Shell
- **Machine Learning** Tensorflow, Pytorch
- **Data Management** MongoDB, MySQL

SELECTED AWARDS

- AAI-20 Scholarship *Feb. 2019*
- Rong-Chang Technology Innovation Scholarship, (Top 0.3%) *Nov. 2017*
- Academic Excellence Scholarship (Type B) of SJTU (Top 5%) *2015-2016 & 2016-2017*
- “Merit Student” of SJTU *2015-2016 & 2016-2017*