Hao Wu

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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*

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