

Yiwei Bai

ACM Class – Shanghai Jiao Tong University

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EDUCATION

ACM Class, Shanghai Jiao Tong University

Bachelor of Science, Major in Computer Science

Shanghai

Sept 2014–June 2018

- Member of **ACM Class**, an elite CS program for top 5% talented students.
- Cumulative GPA: Overall: 85.7/100 | Major: 87.5/100
- Advisors: Prof. **Yong Yu**, Prof. **Weinan Zhang** and Prof. **Guirong Xue**

PUBLICATION

An Empirical Study of Collective Behaviors in Many-agent Reinforcement Learning

- **Yiwei Bai***, Yaodong Yang*, Lantao Yu*, Jun Wang, Weinan Zhang, Ying Wen, Yong Yu(* indicates equal contribution) CoRR abs/1709.04511(2017)
- Understand AI population with multi-agent reinforcement learning and verify the principles developed in the real world could be applied to AI population.
- Submitted To *AAAI 2018*

Scalable Relaxations of Sparse Packing Constraints

Optimal Biocontrol in Predator-Prey Networks

- Johan Bjorck, **Yiwei Bai**, Yexiang Xue, Xiaojian Wu, Mark Whitmore, Carla P. Gomes
- Proposed a scalable approximation algorithm of sparse submodular optimization.
- Solved an important Computational Sustainability Problem – Biocontrol invasive species.
- Submitted To *AAAI 2018*

RESEARCH EXPERIENCE

Institute for Computational Sustainability

Visiting Research Intern

Cornell University

June 2017–Dec 2017

- Advisor: Prof. **Carla P. Gomes**
- Learning & Utilizing Submodular Optimization on biocontrol of invasive species
- Applying Reinforcement Learning in the new CompSus field

APEX Lab

Research Assistant

Shanghai Jiao Tong University

June 2016–June 2017

- Advisors: Prof. **Weinan Zhang** and Prof. **Jun Wang**
- Learned & Utilized Reinforcement Learning in openAI environment
- Focused on Multi-Agent Reinforcement Learning and Developed a **Million-level Multi-Agent Reinforcement Learning Platform**.

TIANRANG

Research Intern

Shanghai

June 2016–Mar 2017

- Advisor: Prof. **Guirong Xue**
- Developing **Yi**, an AI system playing **GO(game)**.

CyberSecurity Camp@Singapore

Visiting Student

National University of Singapore

Feb. 2017

- Organizer: Prof. **Dawn Xiaodong Song**
- Learned Courses of Deep Learning and Cyber-Security
- Participated in the Hackthon and did research in adversarial defense under black-box setting.

PROJECT EXPERIENCE

Yi an AI system playing the GO(game)

Core Researcher & Developer

Jun. 2016–Present

- **Third prize** in the first International Computer Go Competition.
- **Ninth place** in the 10th *UEC Cup*
- Reached **Eweiqi 9 dan the master of the amateur Go player**
- Trained and tuned the policy network and value network.
- Designed and implemented the reinforcement learning framework of the value network incorporated with policy network.

Million-level Multi-Agent Reinforcement Learning Platform

May 2017

- An open-source framework for large scale Multi-Agent Reinforcement Learning

ACM-2015-AI-Server

Dec 2015

- An AI server for *Animal Chess*, used in Programming Fall 2015 AI project ACM Honored Class.

Five-Stage MIPS Pipeline in Verilog HDL

Aug 2016

- Designed and implemented a five-stage pipeline for all MIPS integer operations exception co-processor instructions with forwarding optimization

Compiler MFChen

May 2016

- Designed and implemented a highly functional compiler of MFChen, an language mixing C and JAVA, from *Lexical Analysis* to *Register Allocation* phase.

HONORS AND AWARDS

Gold Medal of ACM Shanghai metropolitan contest

Rank: 17/190

Apr 2015

- Our team solved 7/10 problems and won the gold medal.

Academic Excellence Scholarship (2nd) of Shanghai Jiao Tong Univ. (TOP 10%)

2015, 2016

Zhiyuan College Honored Scholarship of Shanghai Jiao Tong Univ. (TOP 5%)

2015, 2016

First Prize at the NOIP(Provincial Level of China Information Olympiads)

2013

EXTRACURRICULAR PROJECT

Participated in Deep Learning and Reinforcement Learning Books Translation

Apr 2016

- Yoshua Bengio, *Learning Deep Architecture for AI*, Chinese edition in publishing.

SELECTED ACADEMIC PRESENTATIONS

- A 15-minute presentation in reading club of Deep Learning: **Frontiers of DL for Security**
- A 30-minute presentation in reading club of Reinforcement Learning: **On-policy Prediction with Approximation**
- Invited talk in APEX lab: **From AlphaGo to Yi**

LEADERSHIP and ACTIVITIES

Vice president of GO(game) Club

Sept 2015–Apr 2016

Teaching assistant of CS122: Introduction to Programming Language

Sept 2015–Jan 2016