Li Jingshu

Email: jingshu@u.nus.edu

Education

- **National University of Singapore** — Singapore, Singapore
  Ph.D. Student in Computer Science — *July 2022 -*

- **University of Illinois at Urbana-Champaign** — Illinois, U.S.A.
  B.S. in Computer Engineering - Highest honor degree; GPA: 3.97 — *Aug. 2018 - May 2022*
  Courses: *Computer Systems Engineering, Computer-Aided Design, Artificial Intelligence, Machine Learning, Applied Parallel Programming, Data Science and Engineering, Logical and Reasoning, Anthropology in a Changing World etc.*

- **Zhejiang University** — Zhejiang, China
  B.Eng. in Electronics and Computer Engineering; GPA: 3.99 — *Aug. 2018 - June 2022*
  Courses: *Discrete Mathematics, Probability with Engineering Application, Data Structure, Microeconomics, Early Modern Philosophy,Introduction to Algorithm and Model of Computation, etc.*

Research Experience

- **Bug Classification and Grading Criteria Development using Symbolic Execution** — Aug. 2021 - May 2022
  Advisor: Prof. Steven S. Lumetta — *Senior Thesis*
  - **Content**: detect and classify the bugs in student codes using symbolic execution, with dynamic instruction traces of student codes preserved in the execution process; Referring to gold version and full marks student codes, grade student codes using the dynamic instruction traces; Develop a fairer grading method, which brings enlightenment for further improving the grading of programming homework in computer education
- **Machine Learning-based TDTR Failure Analysis and Optimization** — Mar. 2021 - Jun. 2021
  Advisor: Prof. Wee-Liat Ong
  - **Content**: Time Domain Thermal Reflection (TDTR) is a method to measure the thermal conductivity of some multi-layer materials. We utilize linear and non-linear classifiers to forecast the applicability of TDTR model on a specific data set, explore the failure causes of TDTR method and optimize the TDTR model.
- **NLP-based Knowledge Extraction of Diesel Engine Operation Reports** — Mar. 2020 - Jan. 2021
  Advisor: Prof. Hongwei Wang
  - **Content**: build a search tool based on natural language processing and knowledge graph to ease the content search retrieval of diesel engine operation reports; develop Cake Chinese keywords extracting model based on Yake model.

Projects

- **Intelligent Texas Hold 'em Robot Based on Machine Learning (Machine Learning, Robotics, Computer Vision)(Senior Design)(Best Engineering Award & Senior Design Tutor Award)**: Realize an intelligent Texas Hold 'em robot that can play with human players, including mechanical parts and software parts. Its decision-making core consists of a variety of models, and the decision process can be divided into two tasks: classification and regression. (Feb. 2022 - May 2022)
- **Reinforcement Learning based Meal Planning Application (Reinforcement Learning, Monte Carlo Learning)**: Based on Monte Carlo learning, a meal planning program was made, which could select the corresponding ingredients according to the cost and user preference; and a user-friendly GUI interface was also made. (Feb. 2022 - May 2022)
- **Basic Implementation of the Operating System based on X86 (Operating System)**: Designed an operating system based on x86, implemented input logic, achieved underlying implementation and packaging of system call, conducted test and correction of paging. (Jan. 2021 - May. 2021)
- **Real-time Image Capture and Processing Based on FPGA**: designed and implemented a set of FPGA-based system for real-time image capturing and processing. (Aug. 2020 - Jan. 2021)
- **E-Greenbox Business Plan (for 6th International "Internet+" Competition)**: Designed and manufactured an intelligent irrigation system, conducted software development, hardware design, and testing; won the Golden Medal in the 6th "Internet+" Innovation and Entrepreneurship Competition in Zhejiang Area (Jan. 2020 - Oct. 2020)

Publications

- **Senior Thesis (Advisor: Prof. Steven S. Lumetta)**: Using Symbolic Execution to Classify Student Programs and to Develop Fairer Grading Criteria. Jingshu Li. *UIUC IDEALS*. May 2022.
- **Journal Article**: Analysis on Shades of Separation Technical Mode of Desulfurization Wastewater in Power Plant. Wenlan Dong*, Jingshu Li, Yiwei Wang. *China Electric Power*, vol. 49, no. 15, 2021. ISSN1002-1140.

Honors and Awards

- Zhejiang University Outstanding Graduate Awards - 2022
- UIUC Dean's List - 2019 & 2020 & 2021 & 2022
- Outstanding Camper in Tsinghua University CS Summer Camp - 2021
- The Second Prize in the 12th CUMCM - 2020 & 2021
- ZJU-UIUC Institute First-class Academic Scholarship - 2019
- Zhejiang Provincial Government Scholarship - 2019
- ZJU-UIUC Institute First-class Academic Scholarship - 2019

Teaching Experience

- **ZJU-UIUC Institute** Zhejiang, China
  Zhejiang University
  - Teaching Assistant for ECE220 - Computer Systems & Programming 2021 Fall
  - Teaching Assistant for ECE374 - Algorithm & Models of Computation 2021 Fall
  - Writing Assistant for ECE445 - Senior Design 2021 Spring
  - Writing Assistant for RHET101 - Princeple of Writing 2020 Fall
- **ZIBS Institute** Zhejiang, China
  Zhejiang University
  - Assistant tutor of class of ICES-20-04 (2020 Fall UIUC Exchange Student) 2020 Fall

Skills Summary

- **Languages**: Chinese (Native), English(TOEFL-IBT 106, GRE 330)