

KEYAN ZHAI

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EDUCATION

ShanghaiTech University

Sep 2017 - Present

B. Eng. in Computer Science, minor in Business Administration

Grades: Overall GPA 3.34/4 (**Third year GPA 3.82/4, Major GPA 3.95/4, Top 10%**)

Core Courses: Computer Architecture I (**A**), Signals and Systems (**A**), Operating System I (**A**), Artificial Intelligence (**A-**), Software Development and Validation for Medical Cyber Physical Systems (**A**), Cryptography (**A**), Mechanical Design (**A+**), Mechatronics (**A+**)

RESEARCH EXPERIENCE

LIMA Lab, ShanghaiTech University

May 2020 - Present

Internship, Supervisor: Prof. Andre Rosendo

Slimdog Project (webpage: Slimdog Project, paper: [arXiv](#))

- Designed and built a completely new quadruped robot *Slimdog* using Solidworks and 3D printing.
- Implemented Inverse Kinematics (IK) and Raibert control on the robot.
- Developed a new optimization algorithm based on Bayesian Optimization (BO) by adjusting the discreteness of the parameters.
- Studied the impact of different support settings on gait optimization based on the theory of instructional scaffolding.
- Paper submitted to 16-th International Conference on Intelligent Autonomous System (IAS-16) ([arXiv](#)).

Inverted Pendulum Simulation with Black-DROPS algorithm

- Running Black-DROPS algorithm on a double inverted pendulum.

MARS Lab, ShanghaiTech University

Jul 2019 - Sep 2019

Summer Intern, Supervisor: Prof. Sören Schwertfeger

- Read some papers and surveyed on Wi-Fi localization.

WORK EXPERIENCE

Cognitive Intelligence group, BSBII

Jul 2019 - Apr 2020

Internship, Supervisor: Dr. Yi Zhou

- Involved in the development of an online IQ test competition platform [iqtest.pub](#) for both human and machine. The platform is used for MAIQ competition on IJCAI-2020.
- Main contributions: back end development of the log-in/sign-up module, data set management, automatic generation of the RPM problems.

Online Education department, China Telecom

Aug 2018 - Sep 2018

Summer Intern

- Front-end development and video editing with Premiere.

PROJECT EXPERIENCE

Pintos

Course project of Operating Systems I (CS130). This is a group project of 2 people. Pintos is a simple operating system framework for the 80x86 architecture, in which I implemented and strengthened different modules of a simple operating system, including kernel threads, loading and running user programs, virtual memory and a file system.

DDD Pacemaker

Course project of Software Development and Validation for Medical Cyber Physical Systems (CS233). In this project, I designed and built the model of a DDD pacemaker with UPPAAL, Simulink, and implemented its hardware on an Arduino Uno board. Model check, risk management, traceability and testing were also performed to ensure the efficacy and safety of the pacemaker model.

AI Pac-Man

Programming project of Artificial Intelligence I (CS181), originated from the CS188 course at UCB. I strengthened the knowledge that I have learned in class by implementing AI methods such as informed state-space search, probabilistic inference, and reinforcement learning. These concepts are simple but they underlie a lot of real-world application areas such as natural language processing, computer vision, and robotics.

Elevator Robot (webpage: [Elevator Robot Project](#))

Course project of Robotics (CS283). This is a group project of 3 people. In this project, we need to make a Jackal robot with a Kinova manipulator on top take elevators autonomously. We need to do SLAM, navigation, button detection, hand-eye calibration, door open detection, etc.

TEACHING EXPERIENCE

Teaching Assistant, Advanced Computer Architecture ([CS211](#))

Fall 2020

Instructor: Prof. Chundong Wang

- This is a graduate-level course that covers advanced topics and state-of-the-art technologies of computer architecture.

HONORS AND AWARDS

ShanghaiTech University Merit Student, 2019-2020.

ShanghaiTech University Academic scholarship (Top 15%), 2019-2020.

EXTRACURRICULAR ACTIVITIES

Summer Industry Engagement Program, ShanghaiTech

Summer 2019

AI - Robotics group

- Part of the ShanghaiTech practice program in which we visited companies and hi-tech parks to learn about business trends and explore career opportunities. Grade: A+(96.5).

ASSIST 2018, ShanghaiTech

Volunteer

2020 Graduation Ceremony, ShanghaiTech

Volunteer

ShanghaiTech Orchestra

Accordion Player

TECHNICAL STRENGTHS

Language	Mandarin (native), English (oral and written fluency, TOEFL: 107)
Skills	Python, C, C++, Matlab, ROS, Solidworks, L ^A T _E X