

Yicheng Gao

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Education

University of Science and Technology Beijing (USTB)

2019 Sep – Present

B.Eng. in Computer Science and Technology

Currently in the 4th year of study, GPA 91.2/100 (USTB standard), 3.93/4 (WES)

Major courses: Linear Algebra(95) Discrete Mathematics A(99) Data Structure(95)

Yale University (Anticipated)

2023 Sep – 2024 Jun

M.S. in Computer Science

Work Experience

Beijing Bytedance Technology Co., Ltd., Beijing, China

2022 May – 2022 Sep

AI Lab - Intern Audio System SDE

- Participated in the maintenance of an internal speech and audio training framework; debugged and improved the training efficiency of existing models.
- Completed seven biweekly profiling analysis reports of machine learning trials conducted by all speech & audio group members; improved the Average GPU utilization of the group from 70% to 85% within four months following the reports' instructions.
- Implemented automatic analysis scripts that reduced the time for biweekly GPU utilization analysis by 80%.

Projects and Competitions

Knowledge Graph Question Answering System for Trading Risk Data

2023 Feb – Present

Bachelor's Thesis

- Implemented a Semantic Parsing-based KGQA system composed of 5 subsystems (Frequently-Asked-Questions Matching, Named Entity Recognition, Entity Linking, Query Subgraph Generation, Answer Generation).

Exploration and Rescue Robot based on SLAM

2021 Jun – 2022 Jun

City-level Student Research Training Program (SRTP) project - Team leader

- Organized and led the team to implement a robot; achieved the function of applying the LeGO-LOAM algorithm while navigating automatically based on ROS, Raspberry Pi 3b, and STM32.
- Implemented a navigation system based on ROS with a D* Lite global path planning plugin in C++.

Asian Supercomputer Challenge (ASC) 2022

2022 Jan – 2022 Mar

Team member

- Implemented complete training pipelines for BERT and a 4-billion parameter large language model with huggingface and PyTorch.
- Optimized training process using ColossalAI and DeepSpeed (Both open-source distributed learning

frameworks).

5-stage pipeline MIPS processor based on Verilog and FPGA

2021 Sep – 2021 Dec

Team leader

- Organized and led the team to implement a processor capable of processing 45 instructions from MIPS ISA with exception process unit, instruction cache, and delay slot.

Technical Strengths

- Language Proficiency: TOEFL (Mar 2022): R30 L30 S30 W27 / GRE (Oct 2022): V160 Q170 AW3.5
- Programming languages: C/C++, Python, Verilog HDL, Java, Matlab, HTML/CSS, SQL (Postgres)
- Frameworks & Libraries: Numpy, Matplotlib, Pandas, PyTorch, ROS
- Developer tools: Git, Docker, VS Code, Visual Studio, CLion, Pycharm

Scholarship and Awards

- First prize in National English Competition for College Students (NECCS), 2020
- Second prize in Lanqiao Cup C/C++ Programming Competition Beijing, 2021
- USTB Outstanding Merit Student ×2, 2020 - 2021
- People's Scholarship (Special Class, Second Class, First Class in chronological order), 2020 - 2022