Haiyu Wang

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Education

Sichuan University - School of Mathematics 2021/09 - 2025/06

B. S in Mathematics and Applied Mathematics (Jidi Class) Chengdu, China

- GPA **91.11/100**, Rank **2/40** (first five semesters), Rank **3/203** (first four semesters)
- First-Class Scholarship(**2%**), Second-Class Scholarship(**4%**)

Research Interests

I'm broadly interested in many aspects of computer science:

- Machine Learning and Data Mining.
- Natural Language Processing and Computer Vision.
- HPC and Machine Learning System.

Technical Skills

- Programming Languages: Python, C/C++, LaTeX, Linux.
- Frameworks and Tools: PyTorch, NumPy, MPI, OpenMP, Huggingface.
- English Proficiency: CET-6: **605**, IELTS: **7.5**

Preparations for Computer Science

Programming Capability and Self-taught courses

- I won the second prize in LanQiao Python Programming Contest, besides, I also scored 1893 (top 6.35% globally) on leetcode, a famous competitive programming website.
- Self-taught Courses: Data Structure and Algorithm, Operating System, Computer Architecture, Machine Learning, Deep Learning.

PKU-TANGENT nlp-tutorial

This is a nlp tutorial released by TANGENT Group in PKU, which contains many good materials for beginners.Things I've done:

- A text classification task based on LSTM.
- Named entity recognition based on LSTM-CRF.
- Neural Machine Translation.
- The implementation of Transformer and Bert.

Needle (cmu10-714)

Needle is a PyTorch-like deep learning framework mainly built for educational purposes. This framework supports nearly all the elementary modules in deep learning, you can build your own models by using the elements we created. Features are as follows:

- Common operators (e.g. matmul, conv), optimizers (e.g. SGD,Adam) and models (e.g. CNN,RNN,LSTM).
- A mechanism for automatic differentiation that supports backpropagation.
- CPU and GPU NDArray backends which is a simplified version of NumPy that supports different devices.
- PyTorch-like interfaces. You can use needle the in the same way you use PyTorch.

Xv6 (mit 6.s081)

Xv6 is an operating system designed by MIT mainly for educational purposes. In the course mit 6.s081, we need to implement a lot of necessary parts of a full Xv6 operating system. Things I've done:

- Create new system calls.
- A kernel page table per process which is a basic strategy in modern operating systems.
- Lazy allocation strategy, copy-on-write strategy.
- The implementation of per-CPU memory freelists.

Introduction to Computer System (cmu15-213)

- cmu15-213 is a course in CMU called "Introduction to Computer System". The course covers a broad fields of computer system such as assembly language, architecture, data representation, operating system, security, network, etc.