Xichen Pan

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Education

- **Shanghai Jiao Tong University** Shanghai, China
  B.Eng. in Computer Science; GPA: 3.74/4.3, CS Courses: 3.94/4.3 *Sept. 2018 – June 2022 (Expected)*

  Relevant Coursework: Artificial Intelligence, Computer Network, Operating System, Computer Architecture and Organization, Algorithm, Data Structure, Discrete Mathematics, Linear Algebra, Probability and Statistics, Calculus

Skills

- **Programming**: C/C++, Python, LaTeX
- **Packages**: Pytorch, NumPy, pandas, AllenNLP, PyQt5
- **Knowledge**: NLP, Speech, Multimodal Deep Learning, Knowledge Graph

Experience

- **Horizon Robotics** Beijing, China
  Audio-Video Multimodal Speech Algorithm, *Research Intern* *Apr. 2021 – Present*
  - Doing research on Audio-Video Multimodal Speech Recognition.
- **John Hopcroft Center for Computer Science at Shanghai Jiao Tong University** Shanghai, China
  Audio-Video Speech Recognition, *Research Intern* *Mar. 2021 – Present*
  - Trying to use single-modal pre-trained models trained by contrastive learning in large-scale datasets to promote Audio-Video Speech Recognition under the guidance of Prof. Zhouhan Lin.
  - This work can reduce the size of the aligned dataset needed for training Multimodal Speech Recognition model.
- **NSF Center for Big Learning at University of Florida** Gainesville, FL
  Improving Question Answering using EncyclopediaNet, *Summer Research Intern* *July 2020 – Sept. 2020*
  - Improved question answering on CommonsenseQA using EncyclopediaNet under the guidance of Prof. Dapeng Oliver Wu and Dr. Haotian Jiang.
  - Constructed EncyclopediaNet by using facts as nodes and connecting them with each other through if-then reasoning. Introduced multi-hop reasoning in EncyclopediaNet to improve question answering.
  - Extracted the 5W1H information of simple sentences to structure the nodes in EncyclopediaNet using the Bert-based Semantic Role Labeling model.
- **Data Driven Software Technology Lab at Shanghai Jiao Tong University** Shanghai, China
  An AI-based Approach to Check Coding Style, *Research Intern* *July 2019 – Dec. 2019*
  - Developed a coding style automatic generator using Pylint and PyQt5 under the guidance of Prof. Yuting Chen.
  - The software can automatically adjust the 43 commonly used parameters and generate personalized Python coding style configuration file based on existing code in the codebase.

Selected Projects

- **Drug Molecular Toxicity Prediction**: Built GCN and GAT to solve the problem of Drug Molecular Toxicity Prediction in Artificial Intelligence course and got 23/25, the best performing model achieved an AUC score of 0.89 on the test set.
- **MIPS-like Multi-Cycle Pipeline Processor**: Built a MIPS-like Multi-Cycle Pipeline Processor using Verilog in Experiments in Computer Organization course and got 100/100. The processor can execute 31 instructions and supports stall, forwarding, interrupt and exception.
- **Xconey**: Developed an IIoT software that can deal with both data extraction and DNC communication. It can extract the main information by analyzing G-code and communicate with most CNC machine tools. At present, the software has been updated in 5 versions and put into use in the workshops of several colleges and universities.
- **Implementation Work**: Implemented LeNet, AlexNet, VGG, NiN, GoogLeNet, ResNet, DenseNet, GRU, LSTM and other networks by using Pytorch with reference to GitHub open source repositories.

Awards

- **Academic Excellence Scholarship (*2020*)**: rank 31 in 155 candidates in the department
- **Academic Excellence Scholarship (*2019*)**: rank 54 in 470 candidates in the school