

Vincent Foster Chen

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EDUCATION

University of Illinois at Urbana-Champaign

Completed Dec 2023

Master of Computer Science

GPA: 4.0/4.0

Relevant Courses : Distributed Systems, Database Systems, Applied Parallel Programming

National Tsing Hua University (NTHU)

Completed Jun 2021

Bachelor of Science in Physics, Minor in Computer Science

GPA: 3.74/4.0

Relevant Courses: Algorithms, Data Structures, Operating Systems, Computer Architecture

TECHNICAL SKILLS

Programming Languages: C/C++, Python, R, MySQL, CUDA, Javascript, Shell Script

Packages & Tools: PyTorch, Keras, Scikit-learn, Tensorflow, Linux, Hadoop, Git, MongoDB, Docker, MLflow

Certifications: Artificial Intelligence Program (NTHU), Data Science Program (NTHU)

WORK EXPERIENCE

Robotics and Electromechanical Systems, BlueHalo

May 23 – Aug 23

Machine Learning Intern

Rockville, Maryland

- Developed a Transformer-based model using MLflow to render complex scenes for few-shot view synthesis
- Performed data collection with MongoDB and PyTorch to gather a large scale dataset with 8 million images
- Streamlined data collection pipelines within Docker containers, enhancing data transfer across multiple servers

Natural Language Processing and Sentiment Analysis Lab, Academia Sinica

May 21 – May 22

Research Assistant

Taipei, Taiwan

- Published paper, "Learning to Rank Visual Stories with Human Ranking Data" in the Association for Computation Linguistics (ACL 2022)
- Published paper, "Multi-VQG: Generating Engaging Questions for Multiple Images" in the Conference on Empirical Methods in Natural Language Processing (EMNLP 2022)
- Created a novel and generalizable SOTA metric for visual storytelling with PyTorch
- Designed UI with HTML, CSS, and JavaScript to collect multi-image question dataset with Amazon Mechanical Turk

Acoustic Hearing Group, NTHU

Feb 20 – Aug 21

Undergraduate Research Assistant

Hsinchu, Taiwan

- Utilized the Kaldi tool kit with Shell Script to perform adaptation on Automatic Speech Recognition
- Implemented Transformer Model from scratch with Tensorflow to create a text machine translator
- Debugged pre-designed Python algorithms of video subtitle generator to extend video recognition duration

SELECTED PROJECTS

MapleJuice Cloud Computing

Sep 23 – Dec 23

- Built a cloud computing framework which performs 5% faster than Hadoop on small cluster
- Developed a distributed file system supporting get, put, delete operations with replica control
- Utilized gossiping failure detection to maintain a dynamic P2P membership list with fault tolerance

Parameter Efficient Fine-Tuning

Feb 23 – May 23

- Conducted a comprehensive analysis of lightweight tuning methods applied to language models (LM)
- Optimized the loss landscapes of LMs, resulting in SOTA performance on various downstream tasks

Hotel Management System

Sep 22 – Dec 22

- Created a web application using MySQL and Node.js, featuring essential CRUD functionality
- Integrated hotel admin functions, including HR management systems to enhance revenue analysis

Optimization of Convolutional Neural Network with CUDA

Sep 22 – Dec 22

- Implemented neural-network convolutional layers forward pass with various optimization techniques
- Conducted analysis of CUDA kernels using Nsight-System and Nsight-Compute profiling tools

Recreation of Metal Slug Game

Nov 18 – Jan 19

- Programmed a run and gun game using C/C++ with self-designed animation