Chuxuan Hu

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EDUCATION

Zhejiang University Expected 2023. 05
Computer Engineering GPA: 3.91/4
Ranked 1st
Relevant Courses:
Data Structure (A+)
Analog Signal Processing (A+)
Discrete Mathematics(A+)
Intro to Computing: Engineering&Science(A+)
Intro to Electronics(A+)
Computer Systems & Programming (A)
Intro to Computing(A)

University of Illinois at Urbana-Champaign 2021.08 - 2022.05
ECE GPA: 4.0/4.0 *Champaign-Urbana, United States*
Exchange Student during Junior year
Relevant Courses taken:
Parallel Programming (A)
Computation Models & Algorithms (A+)
Digital Systems Laboratory (A+)
Machine Learning (A+)
Data Mining (A+)
Operating System (A)

INTERNSHIP & RESEARCH PROJECTS

Optimizations on VGG16 Network 2022.02
Responsible for Quantization *Champaign-Urbana, United States*
- Joined professor Volodymyr Kindratenko's lab at NCSA, UIUC
- Optimized on VGG16 network using quantization
- To be tested with other portions of optimizations

Multiple Team Replacement 2021.08
Project Leader *Champaign-Urbana, United States*
- Joined professor Tong Hanghang's IDEA lab at UIUC
- Responsible for the project of solving multiple team replacement problem based on graph transformation
- Publishment expected
- Topics related: Graph Coarsening, Graph Neural Network, SAGPooling

Data Visualization at Microsoft 2021.06 - 2021.08
Microsoft SDE Intern *Suzhou, China*
I worked as an intern in Microsoft DsApi Suzhou Extended team during summer 2021. My intern project was to set up a web service to display logs for Link Replications. The web service generates a time sequence diagram and summary page concerning latency/log losts according to Request ID from users' inputs-which greatly improved the efficiency for debugging. In the project, my work included the following:
- Set up web service applying .Net Core MVC framework: users' input was received from view(a Razor document) and passed forward to Model(classes in C#)
- Used KQL wrapped in C# to get data(the log messages) from Kusto
- Built interactive front-end views using Razor(.cshtml; a combination of CSS to define a stylesheet, HTML for view and JavaScript for control functions) to display Json data received from back-end and monitored users' actions using jQuery.
- Revised and format codes to improve readability so that people can easily adjust my code according to their requirements after I off-boarded.
- Presented and demo to Suzhou and to Redmond, receiving positive feedback and adjusted according to given advice.
- Was "Highly Recommended"(the highest rank of recommendation) by manager Cozy Chen.

GPU implementation for DNN 2021.10 - 2021.12
Course Project for Parallel Programming *Champaign-Urbana, United States*
- Optimized DNN by implementing based on parallel programming algorithms
- Made use of streaming and constant memory to reduce latency caused by memory transfer and maximized parallelism by increasing block dimensions as well as adjusting TILE_SIZE
- Tested with graphs Fashion MNIST dataset-with 10000 graphs, each with dimensions of 86 x 86 pixels and 8 layers-reaches 0.8714 accuracy and 69ms of operation time.

Operating System Construction 2022.01 - 2022.05
Course Project for Operating System *Champaign-Urbana, United States*
- Built Linux based operating system as a group of four
- Applied C/asm linkage, able to support virtual memory management/interrupt, system calls, exceptions/scheduling/multiple device drivers/multi terminals/ext2 file system e.t.c.

AI Hackathon for Molecular Dynamics 2022.01 - 2022.02

Team Member *Champaign-Urbana, United States*

- Participated in AI Hackathon sponsored by NCSA UIUC.
- In charge of data pattern recognition: by applying matrix transformation, covariance calculation etc.., successfully dealt with general pattern of the dataset as well as abnormal data points.
- Developed a model that takes combinations of molecular beads as input and predicts periodic length using CNN.
- Based on data pattern, furnished CNN model by fusing parameters.
- Implemented model and trained parameters using PyTorch on theta GPU.

[National Innovation Project] Bio-inspired Water Harvest 2020.08 - 2021.12

Project Leader *Hangzhou, China*

I joined professor Hu Huan's lab at Zhejiang University as a freshman and participated in many of his research project. His lab holds interest in chip manufacturing and deals with fabrications in nano-scale. In August 2020, he encouraged me sponsor a project myself. I did some research and found that Namib insect and its water harvest feature inspires me most-Namib insect can harvest water from air using the special structure of its back. I see the potential of it put into mass production to help region in short of water, which really excites me as my research might improve the life of others. In April 2021, this project was selected as a National Innovation Project. My work includes the following:

- Researched and summarized from existing research and decided that region shapes and region area proportions are the key parameters to improve harvest efficiency
- Designated and performed experiments with different combination sets of parameters
- Analyzed on the data to obtain optimum structure and parameter combinations for water harvest
- Based on experiment outcomes, innovated on new shapes that further improve water harvest efficiency
- **Work was presented at conference ICMAN 2021**

WORKING EXPERIENCE

Teaching Assistant of Intro to Computing 2021.09 - 2021.12

Zhejiang University

This course uses Python as its language and my basic job is to assist course instructor so that students can get familiar with it more easily. My work includes:

- Hold weekly lab sessions where I assist students to write programs that they were required to complete
- Test and grade submitted code
- Grade exam papers

Teacher Assistant & Supervisor of Principle of Writing 2020.09 - 2020.12

During Fall 2020, I worked as a teaching assistant of the course Principle of Writing. I was also selected as the supervisor for the assistants of the course. My work included:

- Held office hours weekly and provide advice on papers from students
- Reported common questions or feedback from students to course instructor
- Organized teaching assistants' meetings and report overall situations as well as special cases (if any) to course director.

League Branch Secretary 2019.09 - Present

- Elected as "Outstanding Student Cadre of Zhejiang University" for both 2019-2020 and 2020-2021 semester

(Selected)HONORS & AWARDS

• 2020-2021 Zhejiang Government Scholarship	Awarded to top 10% students with excellent performance	2021.10
• 2019-2020 National Scholarship	The highest honor for undergraduate students at Zhejiang University	2020.10
• Academic Excellence Award of Zhejiang University	Awarded both for 2020-2021 and 2019-2020	2021.10
• Outstanding Student	Awarded both for 2020-2021 and 2019-2020	2021.10
• 2020-2021 Second Class Scholarship of Zhejiang University		2021.10
• Social Work Excellence Award of Zhejiang University	Awarded both for 2020-2021 and 2019-2020	2021.10
• Outstanding Student Cadre of Zhejiang University		2021.05
• 2019-2020 First Class Scholarship of Zhejiang University		2020.10

SKILLS

- **Programming Languages:** C++ , Python , Javascript , HTML5 , CSS , C# , jQuery , C , System Verilog
- **Certifications:** TOEFL (112[L30 R30 W29 S23])
- **Package & Tools:** Git , LaTex , PyTorch
- **Languages:** English (Fluent) , Mandarin (Native) , Cantonese (Native) , German