HANGZHENG LIN

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EDUCATION

B.Eng. Zhejiang University *August 2017 – June 2021 (expected)*
Dual degree program at Zhejiang University/University of Illinois at Urbana-Champaign Institute. Major: Electrical and Computer Engineering

B.S. University of Illinois at Urbana-Champaign *August 2019 - December 2019*
Exchange student in Department of Electrical and Computer Engineering

UIUC GPA: 3.94 / 4.0 (57.00 GPA Hrs)
ZJU GPA: 3.94 / 4.0 (70.00 GPA Hrs)

RESEARCH EXPERIENCE

Deep Learning Models for Human Aggression Detection *May 2020 - Present*

- Advisor: Volodymyr Kindratenko, associate professor in the department of Electrical and Computer Engineering (ECE) at the University of Illinois at Urbana-Champaign (UIUC).
- Reproduced and compared several vision-based neural network models, including SNN, Transfer Learning model, conv-LSTM, 3D convolution model, on human aggressive behavior.
- Developed new CNN models, including optical flow based VGG, transfer learning + LSTM models.
- Created our own dataset which we manually cut and labeled from internet to evaluate their flexibility.

Human Falling Detection by Optical Flow and CNN *January 2020 - May 2020*

- Advisor: Volodymyr Kindratenko
- Developed a Convolutional Neural Network to train a neuro-based model to detect human falling.
- Created our own video data set, analyzed different data stacking patterns on neural network training.
- Implemented an end-to-end human falling detection model from catching data by camera to providing alarm.

HUAWEI HiSilicon *July 2019 - August 2019*

- Involved in the HUAWEI Turing department and participated in the development of Da Vinci chip operators. (The Da Vinci chip is one of the most advanced neural network chips in the world)
- Accelerated the data transmission by calculating the best way to allocate the moving data and how to divide each part of data and their corresponding buffer and cache.
- Successfully reduced the transmission delay from 50ms into 3ms.

Mathematical Contest in Modeling *January 2019*

- Advisor: Wei Liu, Assistant Professor of Division of Sustainable Buildings Department of Civil and Architectural Engineering KTH Royal Institute of Technology
- The competition asked teams to select, configure, optimally pack, geoposition, deploy and operate a set of midsize (group 2) unmanned aerial vehicles (UAV) that would supplement existing relief to medical supply chains in Puerto Rico.
- Used AHP to set the weights for selected features and did normalization for them. Applied 3D Bin-Packing API to approach the optimal solution of 3D packing problem. Applied Greedy Algorithm, Graph theory to calculate the accurate optimum location.
- Provide a stable model to solve the two NP problems with high usage of containers, quick speed to meet hospital's needs.

- Awarded the **Outstanding Winners** (0.1%) and the **Informs Award** (No.1 world ranking 0.02%)

TEACHING ASSISTANT EXPERIENCE

MATH286 Intro to Differential Eq Plus 2020

- Gave students a weekly discussion section, helped them reviewed the lecture.
- Marked weekly assignments and exams. Answered question for students in Office Hour.
- Graded students final project report and scored their project presentation.

SELECTED HONORS & AWARDS

Zhejiang Provincial Government Scholarship	2019
Zhejiang University Scholarship - First Prize (top 3% in ZJU)	2019
Outstanding Student of Zhejiang University	2019
First-class Scholarship of ZJUI	2019
Academic Excellent Award of Zhejiang University	2019
Brave star of HUAWEI	2019
Top ten Social Practice Teams of Zhejiang University	2019
Third-class Scholarship of ZJUI	2018

SELECTED COURSEWORK

ECE220-Computer Systems & Programming **A**
Studied assembly language and basic concepts of machine-level architecture.

CS225-Data Structures **A+**
Concepts and applications of basic data structures, implementing data structures with C++

ECE374-Algorithms & Models of Computation **A**
Design and analysis of algorithms, formal automata, computability, and complexity

CS447-Natural Language Processing **A**
Studied basic concepts of computational linguistics, from morphology, syntax to semantics, NLP applications such as syntax parsing, machine translation, generation and dialog systems.

CS418-Interactive Computer Graphics **A+**
3D photorealistic rendering and the current rendering methods used in games and other interactive applications.

ECE385-Digital systems Laboratory **A+**
Designed, built, and tested digital systems using transistor-transistor logic (TTL), SystemVerilog, and field-programmable gate arrays (FPGAs).

ECE408-Applied Parallel Programming **ongoing**
provide knowledge and hands-on experience in developing software for processors with massively parallel computing resources.

SKILLS

Programming Languages	C++, C, Python, SystemVerilog, Matlab
Package & Tools	Tensorflow, PyTorch, Git, Shell, Latex, CUDA
Languages	Mandarin Chinese, English