

# Chiyu Wu

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## EDUCATION

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### **Zhejiang University**

B.Eng. in Agricultural Engineering

Hangzhou, China

Sept 2014 – June 2018

- Cumulative GPA: 3.84/4.0, rank 5/60 (2/60 in the third year)
- **Minor in Computer Science**, GPA: 3.94/4.0 (90.61/100) in 20 courses
- Coursework: Java Programming (100), C Programming (98), Oriented-Object Programming, Data Structures (96), Advanced Data Structure & Algorithm Analysis (94), Operating System, Computer Networks, Cryptography (92), Image Processing (96), Computer Graphics (95), Computer Vision (97), Computational Photography (93), Bioproduction Robotics (89), Database System, Calculus II (90), Linear Algebra (90)

## RESEARCH EXPERIENCE

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### **College of Biosystems Engineering, Zhejiang University**

Research Assistant, supervised by Researcher Tao Lin

Hangzhou, China

July 2017 – Present

#### **Vibrational Spectroscopic Data Analysis in CNN**

- Trained an auto-encoder to perform nonlinear dimensionality reduction on samples; then applied one-dimension convolutional neural network with inception module with Keras framework
- Achieved the average classification accuracy of over 90% in different kinds of spectroscopic data, much higher than 77% by the current state-of-the-art method
- Visualized the layer and identified important spectral regions

### **College of Computer Science and Technology, Zhejiang University**

Research Assistant, supervised by Prof. Mingli Song

Hangzhou, China

Feb 2017 – Present

#### **Lip Reading in Chinese**

- Made a Chinese dataset for lip reading, attained videos from CCTV News, and cleaned the data
- Proposed an automatic annotating system that extracts lips and recognizes speeches, forming a text timeline consistent with the video timeline
- Achieved the accuracy of 90% on the proposed system, aligning with human annotation
- Developed an LSTM based sequence-to-sequence model with input padding, word embedding and attention mechanism to achieve lip reading

### **College of Computer Science and Technology, Zhejiang University**

Student Research Training Program, supervised by Prof. Yubo Tao

Hangzhou, China

April 2016 – April 2017

#### **Visualization of Air Pollution based on Mobile Terminal**

- Attained air pollution data, monitoring location and time by Java web crawler
- Used Baidu Map SDK, loaded air pollution data, located monitoring stations, and made visualization in Android Application
- Analyzed air pollution correlation with cities using R language

### **University of Illinois at Urbana-Champaign**

Research Assistant, supervised by Prof. Luis F Rodriguez

Urbana, Illinois, U.S.A.

June 2016 – August 2016

#### **Corn-Ethanol Supply Chain Optimization Model Design**

- Analyzed corn-ethanol supply chain and designed a linear optimization model for best outcome
- Achieved the optimization model with Python and Gurobi optimizer
- Made a best chain plan with the most benefits and made a decision on where to build new plants

## SELECTED PROJECTS

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### **Interactive Digital Photomontage, Zhejiang University**

Hangzhou, China

Course: Computational Photography, Prof. Guofeng Zhang

March 2017 – July 2017

- Implemented an interactive image fusing software system based on algorithms including Graph Cut Optimization and Gradient Domain Fusion
- Implemented an interactive brush between multiply images
- Implemented graph cut optimization to minimize the energy function
- Solved Poisson Equation of gradients between pixels with sparse matrix and gauss-seidel method

### **Takagism Game, Zhejiang University**

Hangzhou, China

Course: Computer Graphic, Prof. Hongxin Zhang

Sept 2016 – Jan 2017

- Implemented a multi-person collaboration takagism game by WebGL with a group
- Developed a roaming model from the first perspective
- Designed an asynchronous obj file loader, with which I can load more than one obj file and add textures on these obj files. Players can click the mouse to select these loaded objects
- Designed rooms with rich illumination system with linear atomization effect and phong model

### **MiniSQL, Zhejiang University**

Hangzhou, China

Course: Database System, Prof. Yueting Zhuang

March 2016 – July 2016

- Implemented a database system where users can input SQL query to realize functions of creating and deleting tables, inserting, deleting and selecting records, building and deleting index which helps to reduce over 80% of the search time.
- Implemented MiniSQL with 7 parts: Interpreter; API; Catalog Manager; Record Manager; Index Manager; Buffer Manager; DB Files

## HONORS & AWARDS

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- First-Class Scholarship for Outstanding Merit (3%), Zhejiang University, October 2017
- Zhejiang Provincial Government Scholarship (selected as one of eight students from 220 applicants), Zhejiang Province, October 2017
- First-Class Scholarship in Research and Innovation Award (1%), Zhejiang University, October 2017
- Gold Medal in Challenge Cup National College Student Business Plan Competition, China Association for Science and Technology (CAST), November 2016
- First Prize in National Olympiad in Informatics in Provinces in Zhejiang Province (NOIP), China Computer Federation (CCF), December 2012

## LEADERSHIP & ACTIVITIES

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### **Chu Kochen Honors College, Zhejiang University**

Intensive Training Program of Innovation and Entrepreneurship

Dec 2015 – Present

- Studied leadership, entrepreneurship, investment and management via special courses
- Participated in business plan competitions with partners and won Gold Medal in *Challenge Cup National College Student Business Plan Competition*

### **Micro News Agency of Zhejiang University**

Sept 2014 – June 2016

Minister of Technology Development Department

- Led a team of 10 to establish and maintain an official website for Micro News Agency
- Took charge of internal training and technology support in the agency

## SKILLS

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- Programming: C/C++, Java, Python, Verilog, Arduino, Python Gurobi, SQL, Android, OpenGL, WebGL, OpenCV, Tensorflow, Pytorch, Keras
- Language: Mandarin (Native), English (Fluent)