Yuhan Wang

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EDUCATION

Zhejiang University (ZJU), Hangzhou, Zhejiang, China

- B.S. in **Computer Science and Technology** Sep 2017 – Jun 2021
- Member of **Chu Kochen Honors College**
  - selects top 6% of students in ZJU
- Advisor: Prof. Deng Cai
- **GPA:** 4.59/5, 3.97/4, **Rank:** 1/145
- **TOEFL:** 109 (Reading: 29, Listening: 28, Speaking: 24, Writing: 28)
- **Core Courses:** Introduction to Data Mining (99), Linear Algebra (98), Fundamentals of Data Structures (98), Probability and Mathematical Statistics (97), Digital Logic Design (97), Numerical Analysis (96), Computer Vision (95), Compiling Principle (94), Object-Oriented Programming (94), Advanced Data Structure and Algorithm Analysis (94), Mathematical Analysis (94), B/S Software Design (93), Discrete Mathematics and Application (93), Image Analysis and Artistic Processing (93), Computer Organization (92), Operating System (91), Database Systems (90)

University of California, Los Angeles(UCLA), USA

- UCLA CSST Program, Research Intern Jul 2020 – Sep 2020, Cancelled
- Cross-disciplinary Scholars in Science and Technology (**CSST**)
- Select 90 students out of 1000+ candidates from top-tier universities in China and Japan to conduct research. **This program is cancelled due to 2020 COVID-19 situation.**

RESEARCH INTERESTS

- Computer Vision: Deep Face Classification, Segmentation, Multi-object Tracking, Lip Reading
- Auto Machine Learning: Neural Architecture Search
- Machine Learning: Multi-Modal Learning and Self-supervised Learning

PUBLICATIONS

[1] Yuge Huang, **Yuhan Wang**, Ying Tai, Xiaoming Liu, Pengcheng Shen, Shaoxin Li, Jilin Li, Feiyue Huang "CurricularFace: Adaptive Curriculum Learning Loss for Deep Face Recognition," in *CVPR 2020*, Virtual Online, Jun 2020.

RESEARCH EXPERIENCE

Active Robotic Sensing (ARoS) Laboratory, North Carolina State University

- Supervisor: Prof. Edgar Lobaton and Dr. Yuhan Chen Jul 2020 – Aug 2020
- *Tracking-by-Detection Based Pedestrian Recognition in Infrared Video*
  - We use YOLOv3 and YOLOv4 as the detector, combining with Deep SORT algorithm as the tracker.
  - Our model achieves a 25% recall performance on a very low resolution scenario and has no person ignorance case.
  - Held remotely due to COVID-19 situation. We are writing a paper to publish our work.

Visual Intelligence and Pattern Analysis (VIPA) Lab, Zhejiang University

- Supervisor: Prof. Mingli Song and Dr. Ya Zhao Mar 2020 – Now
- *Research on Visual information based Lip Reading*
  - We focus on using cross-modal learning and self-supervised learning method to train the visual feature extractor of seq2seq model.
  - We conduct experiments on VGG Lip Reading Datasets (e.g. LRW, LRS2, LRS3) and CMLR Dataset.
  - Effectively reduce the training time of seq2seq model on Lip Reading scenario.

Tencent Youtu Lab, Tencent Shanghai

- Supervisor: Dr. Ying Tai Jul 2019 – Sep 2019
- *Research on Deep Face Classification and Neural Architecture Search.*
  - Focus on using mobile setting NAS algorithm to optimize the feature extraction backbone for deep face classification.
  - I propose a restriction allowed backbone optimization structure using one-shot NAS and evolutionary algorithm.
  - Focus on optimizing the loss for deep face classification and addressing easy samples in the early training stage and hard ones in the later stage.
  - We propose a novel Adaptive Curriculum Learning loss (CurricularFace) that embeds the idea of curriculum learning into the loss function to achieve a novel training strategy for deep face recognition.

AWARDS & SCHOLARSHIPS

- Four gold medals and two silver medals in ICPC and CCPC contests. 2017 – 2018
  Introduced next.
- Provincial Government Scholarship Oct 2019
  Zhejiang University Zhejiang Province, China. Select top 2% student in the school.
- Chu Kochen Honors College Top Student Scholarship – Innovation Prize Nov 2019
  Awarded to 10 out-standing students in Chu-Kochen Honors College out of 500 students.
- First-Class Scholarship for Excellence in Research and Innovation 2018 – 2019
  Awarded to top 20% students in Chu-Kochen Honors College for high performance on Competition and Research.
- Bronze Medal, National Olympiad of Informatics 2016
  Awards of the highest high school programming contest in China, which is held for IOI participant selection. Awarded by CCF, China.

DISCIPLINE COMPETITION

ZJU ACM ICPC (International Collegiate Programming Contest) Team,
Member, Advisor: Prof. Can Wang 2017 – 2019

- I participated in 6 ICPC/CCPC Asia Regional Contest, won 4 gold medals and 2 silver medals. I also have a 2017 EC-Final (East Continental Final) experience and won a bronze medal.
- Gold medal is awarded to top 10% teams of a contest, while there are normally 200 - 300 teams of three.
- Gold Medal List
  - ACM-ICPC Asia Regional Contest Xi'an Site 2017, rank 17/357
  - ACM-ICPC Asia Regional Contest Nanning Site 2017, rank 9/227
  - ACM-ICPC Asia Regional Contest Shenyang Site 2018, rank 10/190
  - China Collegiate Programming Contest (Hang Zhou), 2017, rank 12/190

OTHER WORK EXPERIENCE

Fabu Technology, Hangzhou, Zhejiang, China

- Software Engineer in System Engineering Group and Perception Group Dec 2018 – Jun 2019
  - In system engineering group, try to write codes to apply new message service system to a conti-radar.
  - In perception group, conduct experiments on feature extraction backbones for 3D object detection under autonomous driving problem.

OPEN-SOURCE PROJECTS

Our Pascal Compiler, [code]

- Implement a Pascal Compiler using C++ and LLVM backend, roughly 7000 lines in total.
- Very robust to syntax error and achieve most features of Pascal language, including recursively defined functions and local variables access.

My MUA, [code]

- Implement a MUA Interpreter using Java, while MUA is an functional interpreted language designed by Prof. Kai Weng.

MiniSQL Database Engine, [code]

- Implemente a SQL database engine using B+ trees and supported storing and loading of the data.
- Developed in C++ and have only two developers. Support efficient query and modification using indexes.

Book Management System, [code]

- Use Java and JDBC to design a GUI program of book management system for libraries.

Pumpkin Battle, [code]

- A game designed for CG course, more specifically, a first perspective shooting pumpkin game in a scene with breakable and bouncing walls .
- Developed in C++ and OpenGL with no help from any game engines. Support light tracking and shadow.

SKILLS

Programming: C, C++, Java, Python, Linux Bash, Verilog

Research Tool: PyTorch, Numpy, LaTeX

INTERESTS

Sports: All ball games, especially basketball and badminton.

Go Game: I am an amateur level 3 player in China.

[*CV compiled on 2020-09-22*]