

Zhiyuan Hu

Email: z8hu@ucsd.edu | TEL: (1) 858-214-9169 | LinkedIn: <http://www.linkedin.com/in/zhiyuan-hu-51b391203>

EDUCATION BACKGROUND

University of California, San Diego 09/2020 – Present

Department of Electrical and Computer Engineering. Major: Machine Learning and Data Science

- Overall GPA: **3.79/4.0**

Tsinghua University

08/2016 – 06/2020

Department of Computer Science and Technology. Major: Computer Science and Technology

School of Economics and Management (Minor Degree)

- Overall GPA: **3.84/4.0** Rank: **9/160**

PUBLICATIONS

[1] Ziqi Pang*, **Zhiyuan Hu***, Pavel Tokmakov, Yu-Xiong Wang, Martial Hebert. Unlocking the Full Potential of Small Data with Diverse Supervision (L2ID workshop at CVPR2021) [[PDF](#)][[github repo](#)]

[2] **Zhiyuan Hu**, Jia Jia, Bei Liu, Yaohua Bu, Jianlong Fu. Aesthetic-Aware Image Style Transfer. (ACM MM 2020)[[PDF](#)][[github repo](#)]

[3] HaoZhe Wu*, **Zhiyuan Hu***, Xiangnan He, Yaohua Bu, Jia Jia, Tat-seng Chua. Mining Unfollow Behavior in Large-Scale Online Social Networks via Spatial-Temporal Interaction. In 34th AAAI Conference on Artificial Intelligence (AAAI 2020) [[PDF](#)][[github repo](#)]

[4] Cunjun Zhang, Kehua Lei, Jia Jia, Yihui Ma, **Zhiyuan Hu**. AI Painting: An Aesthetic Painting Generation System. In Proceedings of the 26th ACM International Conference on Multimedia (ACM MM 2018) [[PDF](#)]

*Equal contribution

RESEARCH EXPERIENCE

University of California San Diego, Statistical Visual Computing Laboratory

09/2020 – Present

Advisor: Prof Nuno Vasconcelos

Research on Class Incremental learning

Learning sequential tasks with multiple subnetworks.

- Reduced the class classification problem into task classification problem using multiple subnetworks.
- Constructed a residual adapter equipped backbone to effectively reduce model size.

Carnegie Mellon University, Robotics Institute

06/2019 – 11/2019

Summer intern project

Advisor: Prof Martial Hebert

Research on Few-Shot Learning in Image Classification

Enhancing visual features' generalizability by adding heterogeneous supervision.

- Constructed an benchmark to evaluate the performance and contribution of different supervisions.
- Analyzed the interaction of different supervisions and proposed an unified model to combine them all.
- Improved the performance of Few-Shot learning on Image Classification by 6% in terms of top5 accuracy.
- Published a paper in **L2ID workshop at CVPR2021** as co-first author.

National University of Singapore, Next++ Research Group

01/2019 – 02/2019

Winter intern project

Advisor: Prof Chua Tat Seng

Research on Social Network Analysis

Understanding unfollow behavior of users on Weibo network.

- Established a benchmark dataset on Sina Weibo (containing 1.8 million users and 400 million edges) with the records of user's post content.
- Revealed key factors (social structure, post contents and history behavior) related to user's unfollow behavior.
- Proposed a model which outperformed baselines by 16.44% on average in terms of accuracy.
- Published a full paper in **AAAI 2020** as co-first author.

Tsinghua University, Human-Computer Speech Interaction Research Group

10/2017 – 06/2020

Advisor: Associate Prof. Jia Jia

Research on Aesthetic calculation

Designing an AI Painting system to generate paintings with specific emotion and art style.

- Introduced style transfer and emotion transfer to render pictures generated by GAN.
- Analyzed the function of each module and verify the effectiveness of the model.
- Co-authored a paper published in **ACM MM 2018**.

INTERN EXPERIENCES

Microsoft Research Asia

12/2019 – 06/2020

Intern project in Microsoft Research Asia (MSRA)

Research on Image Recoloring and Aesthetic Aware Image Style Transfer

- Proposed a novel problem that conduct style transfer in the view of aesthetic factors.
- Designed a model which can disentangle image features into disjoint aesthetic spaces and transfer these aesthetic features separately.
- Extended the diversity and controllability of style transfer as well as improve its performance.
- Published a full paper in **ACM MM'20** as first author.

Tencent WeChat department

03/2019 – 05/2019

Intern project in Tencent WeChat department

Research on high-quality comment generation

High-quality comment generation for WeChat moments.

- Developed high-speed map reduce algorithm to handle large amount of data.
- Designed filters based on statistical analysis to alleviate noise moments.

AWARDS & SCHOLARSHIPS

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| • Powell - Bundle Fellowship | 09/2020 |
| • Outstanding graduate of Tsinghua University | 07/2020 |
| • Outstanding graduate of Beijing | 07/2020 |
| • Academic Excellence Award (Top 10% of the Department) | 10/2019 |
| • Academic Excellence Award (Top 10% of the Department) | 10/2018 |
| • 3 rd Prize in The 38th“Challenge Cup” Competition of Tsinghua University | 04/2018 |
| • Comprehensive Excellent Scholarship of Tsinghua University (Top 3 of the Department) | 10/2017 |

SKILLS

- Developing and training complex neural networks
 - Proficient in using pytorch, tensorflow to construct neural networks.
 - Experienced in analyzing and adjusting the training procedure.
- Statistical analysis on large scale dataset
 - Proficient in statistical analysis methods and their applications on large scale datasets.
 - Proficient in drawing figures and charts by Python, MATLAB, etc.
- Environment configuration
 - Experienced in configuring experiment environments and solving environment problems.
- Software engineering and project management
 - Good habits in coding and organizing codes.
 - Experienced in the usage of GitHub and software engineering principles.
- Programming Languages: C/C++, MATLAB, Python, VHDL, Java, JavaScript, Latex, R, Qt, Assembly
- Research Skills: vim, git, cmake, gcc, gdb, docker, tensorflow, pytorch, keras, openmp, opencv
- Software: Visual Studio, Atom, CLion, PyCharm, Eclipse, Multisim