

# ZHENMEI SHI

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## EDUCATION

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<b>University of Wisconsin-Madison, US</b> Master in Computer Science (Full Fund)	<i>09/2019-Present</i>
<b>Hong Kong University of Science and Technology, Hong Kong</b> Bachelor of Science in First major: Computer Science Second major: Pure Mathematics Advanced	<i>09/2015-06/2019</i> GPA: 3.974 / 4.3 Major GPA: 4.190 / 4.3 First Honor (Top 2%)
<b>ETH Zurich, Switzerland</b> Exchange Student	<i>02/2018-08/2018</i> GPA: 5.43 / 6

## AREA OF INTEREST

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Machine Learning, Computer Vision

## PUBLICATIONS

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### **Structured Feature Learning for End-to-End Continuous Sign Language Recognition**

Zhaoyang Yang\*, **Zhenmei Shi\***, Xiaoyong Shen, Yu-Wing Tai (\* equal contribution)

A Sign Language Recognition system used in real-world to help the deaf. Our model clearly outperforms other methods in terms of both accuracy and adaptability.

<https://arxiv.org/abs/1908.01341>

**News**

### **Dual Augmented Memory Network for Unsupervised Video Object Tracking**

**Zhenmei Shi\***, Haoyang Fang\*, Chi-Keung Tang, Yu-Wing Tai (\* equal contribution)

DAWN is ranked third in both VOT2016 and VOT2017 challenges with excellent success rate among all VOT real-time trackers running and has outstanding performance in unsupervised tracking.

<https://arxiv.org/abs/1908.00777>

<https://zhmeishi.github.io/DAWN/>

### **Velocity Vector Preserving Trajectory Simplification**

Guanzhi Wang\*, **Zhenmei Shi\***, Cheng Long, Ya Gao, Raymond Wong (\* equal contribution)

Designed a novel algorithm of trajectory simplification which preserves velocity vector information with given error bound. The time cost is  $O(n^2 * \log n)$  and the space cost is  $O(n)$ .

SIGMOD 2020 (under review)

<https://github.com/zhmeishi/VVPTS/>

## PROJECTS

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### **Colorization for Old Photo**

**News**

Accomplished one deep colorization project from model designing and training in TensorFlow to implementing and compressing the model to SDK in Caffe. This SDK was used more than sixty thousand times in Wechat mini program.

### **High Performance Traffic Assignment Based on Variational Inequality**

**Poster**

Solved Static Traffic Assignment and Dynamic Traffic Assignment under global optimizations and tested on supercomputer Beacon of ORNL in parallel computing. Compared with traditional algorithms, our algorithms had advantages in some aspects, particularly in a big graph.

### **Frchet Distance Computing**

**GitHub**

Designed a new Algorithm based on Real and Direct Frchet Distance Algorithm, R tree and Parallel Computing to participate in ACM SIGSPATIAL Cup 2017 competition.

## WORK EXPERIENCE

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- Internship Base Model Researcher *at* **Megvii** (Face++), China 06/2019-08/2019
- Topic: Neural Architecture Search. Supervised by: **Xiangyu Zhang**
- Research Assistant *at* HKUST CS Department 02/2019-06/2019
- Topic: Video of Tracking. Supervised by: **Prof. Chi-Keung Tang**
- Internship Machine Learning Researcher *at* **Tencent YouTu**, China 12/2018-02/2019
- Topic: Sign Language Recognition. Supervised by: **Prof. Yu-Wing Tai**
- Internship Machine Learning Researcher *at* Tencent YouTu, China 12/2017-02/2018
- Topic: Colorization and Model Compression. Supervised by: Prof. Yu-Wing Tai
- Internship Research Assistant *at* **Oak Ridge National Lab**, US 05/2017-08/2017
- Topic: Traffic Assignment.
- Part Time Programmer *at* **CUHK, HKBU, HKUST** 12/2018, 04/2017, 06/2016-08/2016
- Web construction and Web crawler.

## TEACHING EXPERIENCE

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- Teaching Assistant of CS301 (Intro to Data Programming) *at* UW-Madison Fall 2019

## EXTRA-CURRICULAR

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- Visiting Student *at* **Microsoft Research Asia** (MSRA), China 08/2017
- Mentee *at* Hong Kong X-Tech 12/2017-05/2018
- Vice Chairman *at* **Microsoft Student Club @ HKUST** 02/2017-08/2018
- S.S. Chern Class Member *at* HKUST Mathematics Department 09/2016-06/2019
- Mentee *at* HeadStart @ HKUST 11/2016-03/2017
- Volunteer Teacher *at* Ociva, Maldives 12/2016-01/2017
- Software Team Member *at* HKUST Robotics Team 09/2015-02/2016

## AWARDS & SCHOLARSHIPS

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- Academic Achievement Medal** *from* HKUST 11/2019
- Teaching Assistantship (TA) & CS Departmental Scholarship** *from* UW-Madison 09/2019
- S.S. Chern Class Achievement Scholarship** *from* HKUST Math Department 07/2019
- Undergraduate Research Opportunity Program Award *from* HKUST 04/2019
- Best Student Team *from* HC2 (Switzerland's Biggest Programming Contest) 03/2018
- Champion of Micro Innovation Award *from* **Tencent** 02/2018
- 1st Runner-up *from* HKUST x Radica Big Datathon 12/2017
- Technology Star *from* Beauty of Programming Competition held by **MSRA** 08/2017
- S.S. Chern Class scholarships *from* HKUST Math Department 2016-2019
- 1st Prize of University's Scholarship for Undergraduate Student *from* HKUST 2016-2019
- Reaching Out Award *from* **HKSAR Government Scholarship Fund** 2017-2018
- Exchange Award, Lee Hysan Foundation Exchange Scholarship *from* HKUST 2017-2018
- The Cheng Foundation Scholarship for Mainland Students *from* HKUST 2016-2017
- Dean's List *from* HKUST 2015-2019

## TECHNICAL SKILLS

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**Python:** TensorFlow, PyTorch, Crawler, Pandas, re **C++:** Caffe, OpenCV, MPI, OpenMP  
Java, MatLab, R, C, SQL, CUDA,  $\text{\LaTeX}$ , JavaScript, HTML, Bash