

Minghao Chen

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EDUCATION

Southwest Jiaotong University (SWJTU)

Chengdu, CN

Bachelor of Engineering in Civil Engineering

June 2019

- GPA: 84.52/100; major GPA: 87.17/100; standing: 9/118.
- **Core courses:** Mathematical Model, Geotechnical Engineering, Engineering Geology, Material Mechanics.

EXPERIENCE

SWJTU Key Lab of Transportation Tunnel Engineering of Ministry of Education

Chengdu, CN

Research Assistant

Sep 2019 - Present

- Conducted original research into the dynamic response of tunnel and surrounding soil under long-term loads induced by trains, including literature review, design of the 1/50 model experiment, developing extensive Kalman filtering in MATLAB for processing acceleration and force data, and calculating the frequency response function. Research supported by the National Natural Science Foundation of China;
- Processed acceleration and force data of centrifuge modeling of parallel shield tunnels and calculated the frequency response function;
- Organized resulting data and summarized findings in a research paper submitted to *Tunneling and Underground Space Technology*. Orally reported our work in the *5th China Civil Engineering Society Tunnel and Underground Engineering Branch (CCES-TUWB) Construction Management and Technology Youth Conference*.

China Poly Developments and Holdings Group Co., Ltd.

Chengdu, CN

Project Engineer Intern

June 2019 – Aug 2019

- Performed site inspections, mastered 16 types of construction technologies;
- Reviewed and executed construction plan, and mediated construction disputes and claims;
- Investigated the extent of storm damage to structures and building envelopes and reported to our manager.

The 2018 ASCE/AISC National Student Steel Bridge Competition

Sacramento, CA

Team Leader

Dec 2017- Apr 2018

- Organized teammates, made competition schedule with advisor, and communicated with AISC committee;
- Designed the Pratt truss and innovative fish-bellied beams, reducing the cost and weight of the structure and improving the constructability of the structure;
- Designed the bridge painting based on Sichuan face-changing opera, winning **first place** in display;
- Optimized the assembly sequence and staffing of construction to shorten our time of construction.

SWJTU Key Lab of Transportation Tunnel Engineering of Ministry of Education

Chengdu, CN

Undergraduate Researcher

Nov 2017 – May 2018

- Designed a simulated annealing algorithm to get the optimal solution for channel network design;
- Formulated result charts and tables and published a paper in the *Journal of Highway and Transportation Research and Development* (doi:10.3969/j.issn.1002–0268.2019.06.019) as the second author.

SWJTU Civil Engineering Material Lab

Chengdu, CN

Laboratory Research Assistant

May 2017 – Apr 2018

- Designed cubic specimens made of steel fiber reinforced concrete and cured them under different temperature and humidity conditions to simulate the real environment;
- Observed the microscopic structures of bonding interfaces between shotcrete and rock by 3D electron microscope to explore the influence of temperature and relative humidity on the bond strength and wrote the research report.

PUBLICATION

Liu, C., **Chen, M.**, et al. (2019). "Network Design of Underground Logistics Channel Based on Simulated Annealing." *Journal of Highway and Transportation Research and Development*, 36(06), 151-158. doi:10.3969/j.issn.1002–0268.2019.06.019.

CONFERENCE PRESENTATIONS

Oral Presentation

- **Chen, M.** (2019, Oct.). "An experiment study of dynamic response of shield tunnel under long-term loads induced by trains." *The 5th China Civil Engineering Society Tunnel and Underground Engineering Branch (CCES-TUWB) Construction Management and Technology Youth Conference*, Ermei, China.
- **Chen, M.** (2018, Nov.). "Introduction to SWJTU Department of Civil Engineering." *The 31st Annual Chi Epsilon Pacific District Conference*, Berkeley, CA.
- **Chen, M.** (2018, Apr.). "Analysis of urban flood-waterlogging and design of road drainage system based on low-impact development." *ASCE Mid-Pacific Conference Water Research Paper Competition*, Sacramento, CA.

PATENT

Zhuang, R., Guo, Y., **Chen, M.**, et al. "Real-time haze monitoring system based on thing networking." P.R.China Patent, CN201720451333.5.

HONORS AND AWARDS

SWJTU Merit Scholarship	2015-2017
SWJTU Innovation Scholarship	Oct 2016
The ASCE MIDPAC 2018 Steel Bridge Competition First Prize in Display	Apr 2018
The ASCE MIDPAC 2018 Water Research Paper Competition Third Place	Apr 2018
The Mathematical Contest in Modeling Meritorious Winner	Apr 2017
China Undergraduate Mathematical Contest in Modeling First Prize	Sep 2016
The 10th China Undergraduate Energy Saving & Emission Reduction Contest Third Prize	May 2017

PUBLIC AND UNIVERSITY SERVICE

American Society of Civil Engineers SWJTU Student Chapter	Chengdu, CN
<i>Vice President</i>	<i>June 2018 – June 2019</i>

- Promoted a series of lectures to help over 300 students learn experiences of ASCE competitions;
- Communicated with department administration and other student associations or clubs.

SWJTU Real Estate Elite Club	Chengdu, CN
<i>President</i>	<i>June 2018 – June 2019</i>

- Built and maintained relationships with over 20 real estate companies and obtained funds from them;
- Conducted the company opening-day activity with China Poly Developments and Holdings Group Co., Ltd., attracting over 50 participants.

Chi Epsilon, National Civil Engineering Honor Society	Chengdu, CN
<i>Member of Global Relations Committee</i>	<i>Nov 2018 – Present</i>

- Built relationships between Chi Epsilon and Chinese Universities.

SWJTU Mathematical Modeling Association	Chengdu, CN
<i>Emeritus Academic Member</i>	<i>June 2017– Present</i>

- Judged university contestant papers and advised university mathematics modeling teams in competitions;
- Hosted series of lectures to help thousands of students learn common algorithms in mathematics modeling.

Pengjiawan Charity Bridge Reconstruction Engineering	Macheng, CN
<i>Assistant Engineer</i>	<i>Aug 2017 – Dec 2017</i>

- Assisted to reconstruct a small-scale bridge to ease over 500 locals' commuting. Sponsored by Mao Yi-sheng Science and Technology Education Foundation;
- Conducted and wrote an analysis of historical hydrogeology data and current geology situation of the bridge;
- Designed the pile foundation for the bridge by Midas Civil and applied in the construction.

SKILLS

Programming	Familiarity with MATLAB; basis with C++, and Python
Software	Flac3D, AutoCAD, ANSYS, Origin, Revit, Sketch up, IBM SPSS statistics, Midas Civil
Laboratory	Centrifuge test, Triaxial test, 3D electron microscope, Concrete mechanics performance test