

CHEN ZHANG (陈长)

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Basic Personal Information

Sex: Male **Nationality:** Han **Date of birth:** 1997-09-20 **Education:** Master's degree
Hometown: Qinzhou City, Guangxi, China **Skills:** Python, MATLAB, COMSOL, GT-Autolion, etc.

Education and Working Experience

RA., MNE Dept., City University of Hong Kong , Kowloon, Hong Kong SAR, China	Now
M.E. in Mechatronics Engineering, Shenzhen University , Shenzhen, China	2020 - 2023
Joint M.E. in Mechatronics Engineering, Shenzhen Technology University , Shenzhen, China	2020 - 2023
B.E. in Mechatronics Engineering, Beijing University of Chemical Technology , Beijing, China	2016 – 2020
Bachelor's GPA: 82/100; Master's GPA: 3.47/4.00; IELTS: 6.5(5.5)	

Awards and Fellowships

- ☐ SZU Excellent Master's Thesis (深圳大学百篇优秀硕士学位论文), ---in 2024
- ☐ SZU Outstanding Graduate Award (深圳大学优秀毕业研究生), ---in 2023
- ☐ National Scholarship for Postgraduates (国家奖学金), ---in 2022
- ☐ First*2 + Second Prize of Postgraduate Scholarship (一等*2+二等学业奖学金), ---in 2020 - 2022
- ☐ Second Prize of the 34th National Physics Contest for College Students in Some Regions, Beijing (第 34 届全国部分地区大学生物理竞赛二等奖, 北京), ---in 2017
- ☐ Third Prize of the 9th National Undergraduate Mathematics Competition, Beijing (第九届全国大学生数学竞赛三等奖, 北京), ---in 2017
- ☐ Third Prize of the 28th Beijing Undergraduate Mathematics Competition, Beijing (北京市第二十八届大学生数学竞赛三等奖, 北京), ---in 2017

Publications

- Z. Chen**, X. Huang, L. Chen, and P. Duan, Bayesian optimization for fast and non-destructive parameter identification of Li-ion batteries after manufacturing by combining neural networks, (Submit to *eTransportation*, Manuscript Number: ETRAN-D-25-00453) 2025.
- Z. Chen**, L. Chen, Z. Ma, K. Xu, Y. Zhou and W. Shen, Joint modeling for early predictions of Li-ion battery cycle life and degradation trajectory, *Energy*. 2023, 277:127633.
- Z. Chen**, W. Shen, L. Chen, S. Wang, Adaptive online capacity prediction based on transfer learning for fast charging lithium-ion batteries, *Energy*. 2022, 248:123537.
- Z. Chen**, L. Chen, W. Shen, K. Xu, Remaining useful life prediction of lithium-ion battery via a sequence decomposition and deep learning integrated approach, *IEEE Trans. Veh. Technol.* 2022, 71(2):1466-1479.

Academic Experience

Research Assistant

Now

With Prof. Penghao Duan at City University of Hongkong, Kowloon, Hong Kong SAR, China

Topic: AI for Science

I paid more attention to the mathematical and theoretical foundations of machine learning methods because I believe it can enhance my skills and confidence. My current job is combining first principles knowledge with machine learning to improve the interpretability and reliability of modeling. (Paper has been submitted to *eTransportation*, Manuscript No: ETRAN-D-25-00453) 2025

Peer Reviewed Journals:

✓ Reliability Engineering & System Safety; Scientific Reports; Electrical Engineering; etc.

Postgraduate

2020 - 2023

With Prof. Wenjing Shen at Shenzhen Technology University, Shenzhen, China

Thesis: “Li-ion battery aging modeling and life prediction based on machine learning”

In view of Li-ion battery system modeling and state prediction, Zhang has made the following achievements:

- For Li-ion battery capacity regeneration and multi threshold failure, an aging modeling scheme combining sequence decomposition and deep learning is proposed to achieve more accurate and robust RUL prediction. (*IEEE Trans. Veh. Technol.* 2022, 71(2):1466-1479)
- For fast charging Li-ion batteries, a feature extraction method and a transfer learning modeling scheme are proposed to achieve accurate SOH prediction for multi task adaptability. (*Energy*. 2022, 248:123537)
- A novel-architecture joint modeling scheme is proposed for decoupling cell-to-cell variability and cycle-by-cycle aging in Li-ion batteries. The results will promote high-dimensional parameter design and optimization, thereby accelerating development and reducing testing costs. (*Energy*. 2023, 277:127633)

Research Projects:

- “Research on aging modeling and remaining useful life prediction of automotive Li-ion battery based on deep learning”, SZTU Graduate Fund, [Grant No. 20213108010001], 2021-2023, (**Leading**)
- “Research on dynamic spatio-temporal modeling method and mechanism for multi field coupling of Li-ion battery pack”, NSFC, [Grant No. 51906160], 2020-2022, (**Participating**)

Undergraduate

2019 -2020

With Prof. Yin Liu at Beijing University of Chemical Technology, Beijing, China

Thermal conductivity simulation and sample preparation of EVA/SCF materials, using ANSYS software.

Internship learning: Dalian Rubber & Plastic Machinery Co., Ltd., Dalian, Liaoning Province. (2019)

Personal Statements

Zhang has always been a highly self-motivated and self-disciplined student. At present, Zhang is dedicated to providing modeling schemes and solutions with more adaptability and generalization capability for complex industrial systems, based on machine learning. He is extremely eager for knowledge in the interdisciplinary fields, and will always strive to improve his comprehensive ability and insight.