

SIHENG YI

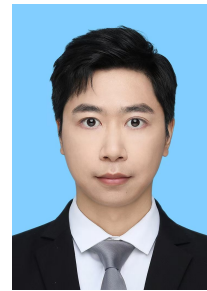
Doctoral Student

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🌐 <https://sihengyi.github.io/>



Education

- ★ **Southern University of Science and Technology** September 2021 to present
No. 1088 Xueyuan Avenue, Shenzhen, P.R.China
 - **Doctoral Student in Mathematics**, advisor: **Fuquan Fang**, co-advisor: **Yifei Zhu**
 - **Main courses:** Algebraic Topology, Topics in Geometry and Topology, Algebra, Lie Groups and Representations, Differentiable Manifolds.
- ★ **Nankai University** September 2017 to June 2020
No. 94 Weijin Road, Tianjin, P.R.China
 - **M.S. in Mathematics**, advisor: **Xiugui Liu**
 - **Main courses:** Rational Homotopy Theory, Homotopy Theory, Associative Algebra, the Stable Homotopy Groups of Spheres, Functional Analysis.
- ★ **Chengdu University of Technology** September 2013 to June 2017
No. 1 East Third Road, Erxianqiao, Chengdu, P.R.China
 - **B.C. in Mathematics**
 - **Main courses:** Ordinary Differential Equations, Numerical Analysis, Discrete mathematics, Data Structures and Algorithm Analysis, Advanced Language Programming, Data Analysis, Principles and Applications of Database.

Experience

- ★ **Southern University of Science and Technology** December 2020 to July 2021
1088 Xueyuan Avenue, Shenzhen, P.R.China
 - **Research Assistant**
 - Participate in research activities of the research group and reproduce existing results of others. The research involves geometric reconstruction of time series and processing of datasets using topological data analysis.
- ★ **Hainan Micro-City Future School** October 2020 to December 2020
Chengmai County, Haikou, P.R.China
 - **Math Teacher**
 - Teach middle school students mathematics courses and participate in the production and discussion of textbook content.
- ★ **China Three Gorges Corporation** July 2019 to August 2019
1 South Yuyuantan Road, Beijing, P.R.China
 - **Intern**
 - By establishing an recurrent neural network model to predict the long-term and short-term electricity loads in some certain regions.

Research Interests

Applications of topology, geometry and algebra to interdisciplinary research, especially topological data analysis, as well as pure mathematics in various applications, such as persistence modules, Takens' embedding.

Papers

- Pingyao Feng, Siheng Yi, Qingrui Qu, Zhiwang Yu, Yifei Zhu. Topology combined machine learning for consonant recognition. arXiv preprint arXiv:2311.15210, 2023.
<https://arxiv.org/abs/2311.15210>
- Siheng Yi, Yifei Zhu. Decomposition of multi-parameter persistence modules(draft).
- Siheng Yi. Persistence Minimal Quillen Models(draft).

Research Grants

- ★ National Natural Science Foundation of China (NSFC) General Program grant 12371069, Methods of algebraic topology to study moduli spaces: with applications to homotopy theory, condensed matter physics, and time series analysis(participant).

Awards and Fellowships

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| ★ Gongneng Scholarship, Nankai University. | December 2019 |
| ★ Excellence Scholarship, Nankai University. | November 2018 |
| ★ National Encouragement Scholarship,
Sichuan Provincial Department of Education. | December 2014 |

Skills and Interests

- ★ **Language:** English, Chinese.
- ★ **Programming Language:** Python, C, Java.
- ★ **Interest:** Swimming, Fitness, Reading, Traveling.

Teaching Experience

- ★ Southern University of Science and Technology
 - Teaching Assistant for Courses:
 - Calculus I, MA117
 - Calculus II A, MA102B
 - Linear Algebra A, MA107A