

Feng Pingyao

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EDUCATION

• Southern University of Science and Technology (SUSTech)

Honor Class in Mathematics and Applied Mathematics (Bachelor)

GPA: 3.67/4.0; rank: 13/43

Shenzhen, China

Sep 2020-Jun 2024 (expected)

RESEARCH EXPERIENCES

• Topology combined machine learning for consonant recognition

Project Leader

Jun 2022-Jun 2023

Supervisor: Prof.Zhu Yifei of College of Science at SUSTech

- **Classified phonetic data using topological features:** Conducted classification of voiced/voiceless natural sound records, utilizing persistent homology to extract topological features to achieve a accuracy more than 95%.
- **Developed coding and presentation skills:** Engaged in comprehensive programming code design employing Python and Matlab, with regular presentations and discussions to develop, refine, and assess the models.

• Geometric visualization for moduli spaces of quantum mechanical systems

Assistant

Jun 2022-Mar 2023

Supervisor: Prof.Zhu Yifei of College of Science at SUSTech

- **Computed and visualized surfaces with singularity arising from condensed matter physics:** Computed distinguished curves of discriminant surfaces of high degree using Mathematica; got acknowledged in their paper.
- **Participated and collaborated in an interdisciplinary exhibition:** Collaborated with technicians to produce 3D-printed models, developing the ability communicate with researchers from diverse interdisciplinary backgrounds.

ADDITIONAL EXPERIENCES

• iGEM: Engineered P. aeruginosa filamentous phage for biofilm-targeted therapy

Modeling

Jan 2023-Oct 2023 (expected)

Supervisor: Prof.Yang Liang of School of Medicine at SUSTech

- **Conducted dry experiment:** Built up quorum sensing and population growth models for Pseudomonas aeruginosa theoretically to measure the feasibility of temperate phage therapy.

• Deep learning programming proficiency practice

Trainee

Jun 2023-Jul 2023

Supervisor: Prof.Wang Di of Computer Science at King Abdullah University of Science and Technology

- **Code Writing:** Get familiar with models and procedures in deep learning, built up Transformer model to predict time series.

• Seminar on Riemannian geometry

Lecturer

Sep 2022-Jan 2023

Supervisor: Prof.Liu Bochen of College of Science at SUSTech

- **Presented topics in Riemannian geometry:** Acquired fundament in Riemannian geometry, introduced to topics such as Riemannian matrices, curvature, Jacobi fields, etc.

• Microbiology lab work-study job

Assistant

Jun 2022-Aug 2022

Supervisor: Prof.Dong Tao of School of Life Sciences at SUSTech

- **Stepped into the biology laboratory:** Assisted group members to perform laboratory such as preparation of different mediums, inoculation of bacteria, employment of PCR and agarose gel electrophoresis, etc.

• Seminar on computational topology

Lecturer

Feb 2022-Jun 2022

Supervisor: Prof.Zhu Yifei of College of Science at SUSTech

- **Introduced to computational topology:** Acquired fundament in computational topology and presented on various topics, for example, the appliance of computational topology inside musical data and deep learning.

SKILLS

- **English proficiency** TOEFL: 97 (reading 25/ listening 26/ speaking 22/ writing 24,)
- **Programming proficiency** Python, Matlab, Mathematica

HONORS AND AWARDS

- Silver medal in SynBio Challenges (Team: SUSTech-Med), 2023
- Third Prize Scholarship for Excellent Students at SUSTech, 2022
- First Prize in Contemporary Undergraduate Mathematical Contest in Modeling, 2021
- Third Prize Scholarship for Excellent Freshmen at SUSTech, 2020