Pingyao Feng

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EDUCATION

- **Southern University of Science and Technology (SUSTech)** — Shenzhen, China
  Honor Class in Mathematics and Applied Mathematics (Bachelor) — *Sep 2020-Jun 2024 (expected)*
  GPA: 3.67/4.0; rank: 13/43

RESEARCH EXPERIENCES

- **Limiters in finite volume methods for conservation law**
  Thesis — *Oct 2023-Jun 2024 (expected)*
  Supervisor: Alexander Kurganov, from College of Science at SUSTech
  - **Stepped into numerical methods for nonlinear systems**: Studied different limiters and their behaviors in preventing oscillation in finite volume methods.

- **Topology combined machine learning for consonant recognition**
  Project Leader — *Jun 2022-Jun 2023*
  Supervisor: Yifei Zhu, from 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: Yifei Zhu, from 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*
  Supervisor: Liang Yang, from 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: Di Wang, from 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: Bochen Liu, from College of Science at SUSTech
  - **Presented topics in Riemannian geometry**: Acquired fundament in Riemannian geometry, introduced to topics such as Riemannian matrics, curvature, Jacobi fields, etc.

- **Microbiology lab work-study job**
  Assistant — *Jun 2022-Aug 2022*
  Supervisor: Tao Dong, from 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: Yifei Zhu, from 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