Ziyang Yu

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EDUCATION BACKGROUND

Southern University of Science and Technology (SUSTech) **Guangdong, China**
Major: Mathematics and Applied Mathematics (Honor Class) *Aug. 2019-present*
Major GPA: 3.78/4.00

COURSEWORKS

Selected Mathematics Courses: Advanced Linear Algebra II(H), Abstract Algebra(H), Topology, Complex Analysis(H), Scientific Computing, Partial Differential Equations(H), Algorithms for Convex Optimization, Applied Stochastic Process, Functional Analysis.

Selected Computer Science Courses: Data Structure and Algorithm Analysis B, Deep Learning.
(Notation "H" means Honors Class)

SEMINARS

Fourier Analysis Seminar **SUSTech**
Advised by Bochen Liu *Jun. 2021-Aug. 2021*

- Learned about fourier analysis and its applications in partial differential equations.
- Gave a talk on the topic *Fourier Transform* in the seminar.

Optimization Seminar **SUSTech**
Advised by Jin Zhang *Apr. 2022-Jun. 2022*

- Learned about variational analysis and its applications in optimization.
- Gave a talk on the topic *Semi-smooth Newton Method* in the seminar.

Measure Theory Seminar **SUSTech**
Advised by Bochen Liu *Jun. 2022- Jul. 2022*

- Learned about abstract measure, including Hausdorff measure.
- Gave a talk on the topic *Abstract Measure* and *Self-similarity* in the seminar.

RESEARCH EXPERIENCE

Chinese Comments Keyword Extraction **Weee! Inc.**
Advised by ZHANG Zhen *Apr. 2021-Jan. 2022*

- Learned the basic tools and skills of Natural Language Process.
- Applied k-means clustering model for extractions.
- Proposed a method for accurately extracting keywords from Chinese reviews of products.

ML-based large-scale distributed GNN training (Under Review of ICML 2023) **Emory University**
Advised by Liang Zhao *Jul. 2022-present*

- Learned the basic tools and skills of Graphical Neural Networks, especially in distributed GNN training.
- Proposed a framework to improve the accuracy of **PyGAS**.

SKILLS

- Extensive knowledge of Linux, Docker, Python, C++, Matlab and could use Python packages including Pytorch, Pytorch Geometric, NNI (Microsoft AutoML Toolkit), Numpy, Pandas, Scikit-learn, computer vision, Keras, HanLP, NLTK and so on fluently.
- Extensive knowledge of mathematics, including Algebra, Analysis, Geometry, Topology, Numerical Analysis, Optimization, Probability, Stochastic and so on.
- Proficient in machine learning algorithm (especially GAN, LSTM, VAE, GNN)
- Familar with common data structure and algorithms (especially Stack, Linked list, Tree, Graph)
- Familar with Natural Language Process models and tools (Bert, HanLP, NLTK, etc.)
- Master Microsoft Applications (Excel, Word, PowerPoint), LaTeX.

AWARDS & ACHIEVEMENTS

- Freshmen Scholarship of SUSTech
- 2020 Second-class Outstanding Student Scholarship
- 2020 Third prize in Mathematics competition of Chinese College Students
- 2021 Third-class Outstanding Student Scholarship
- 2021 Third prize in Mathematics competition of Chinese College Students

RESEARCH INTERESTS

- Mathematics
  - Numerical Analysis
  - Optimization and Control Theory
  - Algebra
  - Topology and Geometry
- Deep Learning
  - Natural Language Process
  - Graphical Neural Networks
  - Deep Learning Theory