

# Fengyuan Liu

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## Education Background

<b>University of Oxford</b> , Oxford, England	10/2022-10/2023 (expected)
<ul style="list-style-type: none"> <li>● M.Sc. Advanced Computer Science</li> <li>● Topics Covered: Quantum Process and Computation, Geometric Deep Learning, Graph Representation Learning, Computational Biology, Deep Learning in Healthcare</li> </ul>	
<b>University of Washington</b> , Seattle, WA	09/2017-12/2020
<ul style="list-style-type: none"> <li>● B.Sc. in Computer Science</li> <li>● B.Sc. in Applied Computational Mathematical Science (Data Science &amp; Statistics)</li> <li>● Magna Cum Laude with GPA: 3.95/4.0 (around top 0.5%) and Dean's List: 10/10 full quarters</li> <li>● Topics Covered: ML, DL, RL, NLP, Stochastic Process, Cryptography</li> </ul>	

## Publications

### [1] **OpenFE: Automated Feature Generation beyond Expert-level Performance**

Tianping Zhang, Zheyu Zhang, Zhiyuan Fan, Haoyan Luo, **Fengyuan Liu**, Qian Liu, Wei Cao, Jian Li  
*International Conference on Machine Learning (ICML)*, 2023 (under review)

## Research Experience

<b>Institute for Interdisciplinary Information Sciences, Tsinghua University</b>	Beijing, China
<i>Research Intern, ADL Group, under the supervision of Prof. Jian Li</i>	05/2022–10/2022
<b>Automatic Feature Generation</b>	
<ul style="list-style-type: none"> <li>● Used GBDT to design a model called OpenFE to quickly and accurately measure the validity of new features</li> <li>● Reproduced AutoCross, AutoFeat, SAFE and FCTree methods and compared them with OpenFE</li> <li>● Did experiments and compared the prediction results with various kinds of databases [1]</li> </ul>	
<b>Smart beta based on multi-factor models</b>	
<ul style="list-style-type: none"> <li>● Pre-processed raw factors in the tabular form about all stocks listed on the Shanghai and Shenzhen stock markets from 2017 to present</li> <li>● Dealt with factors by filtering stocks, excluding extreme values, filling null values, doing industry neutral, and standardizing.</li> <li>● Mainly employed Lightgbm to train and compare the prediction results with different labels (pct1, pct2, or pct5) with various factors combination</li> <li>● Wrote a script to run once per day to forecast and prepare for practical application</li> </ul>	
<b>The University of California, Berkeley</b>	Berkeley, CA
<i>Research Intern under the supervision of Prof. F. Alberto Grunbaum</i>	09/2021-01/2022
<b>The Principle and Applications of Random Walks in Various Disciplines</b>	
<ul style="list-style-type: none"> <li>● Researched on random walks in dimensions 1, 2 and 3 to verify that the random walk in each dimension was recurrent or transient</li> <li>● Studied the applications of random walks in Economics, Physics and Biology</li> <li>● Published a single-author paper entitled The Principle and Applications of Random Walks in Various Disciplines</li> </ul>	
<b>University of Washington</b>	Seattle, WA
<i>Undergraduate Researcher, Washington Experimental Mathematics Lab</i>	01/2020-03/2020
<b>Triply Periodic Polyhedral Surfaces</b>	
<ul style="list-style-type: none"> <li>● Studied the Octa-4{3, 8 3}, Octa-8{3, 12 3} and Cube-6{4, 6 4} triply periodic surfaces</li> <li>● Constructed a new triply periodic polyhedral surface made out of triangles, 12 meeting at each</li> </ul>	

- vertex by finding a hyperbolic representation of such a surface using hyperbolic triangles
- Determined the genus of the surface obtained after identifying appropriate pairs of faces
- Advisor: *Dr. Charles Camacho* and *Dr. Dami Lee*

## Industry Experience

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### Morgan Stanley

*Part-time Assistant (PTA) of the Investment Analysis Project*

01/2020-02/2020

- Analyzed the financial data in the annual and semi-annual reports of ION Geophysical Corporation
- Applied the Altman Z Score and SWOT model to analyze the basic situation, bankruptcy probability and acquisition risks & opportunities of the company

### China Telecom Co., Ltd

Nantong, China

*Intern at the IT Department*

06/2018-09/2018

- Familiarized with the channel-based system positioning, business-based system positioning and customer-based system positioning of the BSS system
- Collected, analyzed and reported customer information through development tools including SQL language and Microsoft Visual Studio

## Leadership & Volunteer Experience

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### SEA Academy

Honor Scholar of Mathematical Studies & Computer Science department

09/2022-Present

- Guided more teenagers to launch research, help them explore their interests and improve the society.

### Framework Media Organization

Post-production Officer

05/2018-10/2019

- Worked in teams to produce videos and edited pictures using Premiere Pro, After Effect, and Photoshop

### Society of Women Engineers

Member

04/2018-10/2019

- Promoted the diversification of scientific and technological talents, especially women in high-tech fields

## Skills & Hobbies

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### Professional Qualification:

CFA Exam Level I (August 2021): Pass

### Computer Skills:

Java, Python, C#, SQL, Java Script, MATLAB, R, LaTeX

### Hobbies:

Piano, Swimming, Ancient Chinese Philosophy, Jeet Kune Do