Zixuan Xie

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EDUCATION

Fudan University (FDU) — 09/2020-06/2024

B.E. in Software Engineering — GPA: 3.58*/4.0

Course Highlight: Software Engineering (A), Operating System (A), Database Design (A), Computer Architecture (A), Software Requirement Engineering (A), Engineering Ability and Accomplishment (A-), Industrial Internet Software Technology (A-)

University of Alberta (UA) | Exchange Program — 01/2023-04/2023

Major: Computer Science — GPA: 4.0/4.0

Course Highlight: Algorithm (A+), 3D Modeling and Animation (A+)

PUBLICATION

Xie, Zixuan, et al. "Combinatorial Properties for a Class of Simplicial Complexes Extended from Pseudo-fractal Scale-free Web." *Fractals* 31.03 (2023): 2350022.

CONFERENCE ATTENDED

WINE 2023 The 19th Conference On Web And InterNet Economics — Shanghai, China, December 4-8, 2023

RESEARCH & PROJECT

Calculating Kemeny Constant and Biharmonic Distance for Large Graphs — 06/2023-present

Core member, supervised by Professor Zhongzhi Zhang — *Fudan University*

➢ Designing an approximation algorithm to reduce the time complexity of calculating Kemeny constant and biharmonic distance on large graphs with probability guarantees

➢ Decomposed the graph Laplacian matrix using the incomplete Cholesky factorization to streamlining computations

Learning, Optimization, and Games Reading Group — 04/2023-present

Group member, supervised by Professor Xiaoqi Tan — *University of Alberta*

➢ Attended group meetings of the Learning, Optimization, and Games (LOG) Reading Group

➢ Gave a presentation on Dynamic TCP Acknowledgement Problem about the deterministic algorithm derivation and provided the corresponding randomized algorithm

➢ Explored various solution methods beyond Primal-Dual and finished a written report

Combinatorial Properties for a Class of Simplicial Complexes — 06/2022-03/2023

Core member, supervised by Professor Zhongzhi Zhang — *Fudan University*

➢ Completed the expressions of the combinatorial properties for a class of simplicial complexes created by a graph product, including independence number, domination number, chromatic number, number of acyclic orientations, number of spanning trees, and number of perfect matching for some particular cases

➢ Drafted a paper as the first author, which was published in March 2023 in *Fractals*

➢ Received approval for the Fudan Undergraduate Research Opportunities Program and passed the final academic defense

Forest Carbon Sequestration Prediction and Decision-Making Model — 02/2022

Programmer in ICM Contest — *Fudan University*

➢ Established a modified logistic model to predict the carbon sequestration in forests with different deforestation frequencies and the decision model to provide the most environmentally friendly plan

➢ Collected and applied the model to forest data from Tennessee

➢ Won Meritorious Winner of Interdisciplinary Contest in Modeling (Top 7%)

The Convergence Time of Opinion Dynamics Models With Opinion Leaders — 01/2022-05/2022

Core member, supervised by Professor Zhongzhi Zhang — *Fudan University*

* recalculated due to the reformation of the GPA policy of Fudan University.

> ➢ Proposed an innovative estimator-based algorithm using sampling techniques, which bypassed computational complexities associated with matrix inverses

EXTRACURRICULAR & VOLUNTEER ACTIVITIES

FDU Student Choir | Alto Principal   09/2020-07/2023
> ➢ Organized weekly rehearsals and acted as principal for major events, responsible for costume, commuting, etc.

FDU Expedition Club for community volunteer service | Manager of New Jiangwan Street Service Station   09/2020-06/2022
> ➢ Held weekly science popularization lectures for underrepresented children in New Jiangwan street library

FDU Computer Science Student Association | Human Resources Officer   09/2020-06/2021
> ➢ Contacted both parties before crucial events, nailed down lecture topics, time and participant numbers, etc.

SCHOLARSHIP & HONORS

Meritorious Winners of Interdisciplinary Contest in Modeling, ICM	2022
Outstanding Undergraduate Graduate of Fudan University	2024
Excellent Student at Fudan University (recommended by art troupe)	2022-2023
Second Prize Scholarship at Fudan University	2021-2022
Excellent Student at Fudan University (recommended by Software School)	2021-2022
Excellent Student at Fudan University (recommended by Software School)	2020-2021
Third Prize Scholarship at Fudan University	2020-2021
Fudan-OPTV of China Scholarship	2023-2024

SKILLS & QUALIFICATIONS

Computer Language: C (3 yrs), C++ (2 yrs), Java (2yrs), Python (1yr), Matlab (1yr)

Software: Office, Matlab, IDEA, Visual Studio Code

Language: Mandarin (native), English (professional working proficiency)

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