

Chenyu Fan | Math & Stats & CS

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Education

University of Illinois at Urbana-Champaign

Bachelor of Mathematics & Statistics, Liberal Arts & Sciences

Champaign, IL

August 2016 - Present

- Cumulative GPA: 3.92/4.00
- Major GPA: 4.00/4.00
- Minor in Computer Science
- Relevant CS Courses: Data Structure, Database System, System Programming, Numerical Analysis, Applied Machine Learning, Computer Architecture, Data Mining, Art of Web Programming, Artificial Intelligence
- Relevant Math & Stats Courses: Calculus Sequence, Fundamental Mathematics, Honors Abstract Linear Algebra, Intro to Abstract Algebra, Probability Theory, Differential Equations, Applied Complex Variables, Elementary Real Analysis, Intro to Combinatorics, Methods of Applied Statistics
- Languages: Java, Python, JavaScript, HTML5, CSS3, C, C++, SQL, Mathematica, Matlab, Clojure

Project Experiences

Movie Searching Web Development

Champaign, IL

○ Advisor: Deniz Arsan

January 2020 - Present

- Worked with HTML5, SASS, React.js, JavaScript and ES6 for developing interactive webpages involved with movie searching
- Gathered information from TMDb API via Axios calls and updated the DOM within the result sets

Job Searching Web Development

Champaign, IL

○ Github: <https://github.com/liuxingzhi/411teamproject>

January 2019 - May 2019

- Executed and contributed to full-stack web development projects, with an emphasis on front end features by using Bootstrap
- Provided internet related services including web site design, front-end web development, domain name registration
- Developed and maintained a MySQL cloud database for company information, job descriptions and user profiles
- Connected MySQL database to user interface and push the website to AWS server in collaboration with other group members

Data Visualization Web Development

Champaign, IL

○ Advisor: Mattox Beckman

February 2019 - May 2019

- Familiarized Python request, BeautifulSoup and selenium library to scrape courses data from course explorer of UIUC
- Classified all the course at UIUC for Spring 2019 semester based on their stated prerequisites
- Visualized disconnected network graph based on the course dependencies structures by using D3.js, HTML5, SASS, Bootstrap

Individual Clojure Project

Champaign, IL

○ Professor: Mattox Beckman

October 2018 - December 2018

- Introduced data structures including linked list, map and set and implemented queue and heap operations in Clojure
- Constructed the Lindenmayer Systems by operating vectors and linked lists and visualized the demos with PuTTY

Illinois Geometry Lab (IGL)

Champaign, IL

○ Advisor: A.J. Hildebrand

August 2017 - December 2017

- Learn relevant background material on chaotic maps, generalized tent maps, exotic number systems and integer partitions
- Investigate "Beatty-type" tri-partitions of the positive integers related to the Golden Ratio and possible connections to tent-like maps
- Develop visualizations of piecewise linear maps and tent-like maps by Mathematica

Independent Study

Champaign, IL

○ Advisor: Matthew Ando

June 2017 - August 2017

- Familiarize with concepts and theorems from Abstract Algebra including ideals, Hilbert Basis, Groebner Bases
- Relate Galois theory and group theory to explain the patterns of constructible origami numbers
- Investigate the connections between compass and straightedge problems and constructible origami numbers and examine the necessary proofs

Work Experiences

CS411 Grader

Champaign, IL

○ Mentor: Abdussalam Alawini

June 2019 - August 2019

- Responsible for the collection, grading, organization, and return of graded students materials on GradeScope

- Web Development Internship** **Champaign, IL**
- Advisor: Jiawei Han May 2019 - October 2019
- Published three demos in both KDD conference 2019 and Army Research Lab in collaboration with PhD students within Data Mining Group led by Prof. Jiawei Han
 - Designed an automatic system which could generate highly related keywords and topics according to inputs of users [TopicMine Demo]
 - Preprocessed the data of multiple JSON files containing recent published papers in Data Mining and represented them in Line Chart, Pie Chart, and other graphic materials with Bootstrap [NSCTA Demo]
 - Developed a fully interactive UI in which users could review recent news of Hong Kong Protest by selecting specific time, location and topic [Cube Demo]

Publications

- Demo Paper** **Champaign, IL**
- <http://chaozhang.org/papers/2019-kdd-demo-a.pdf> August 2019
- [2] TopicMine: User-Guided Topic Mining by Category-Oriented Embedding
 Yu Meng, Jiaxin Huang, Zihan Wang, **Chenyu Fan**, Guangyuan Wang, Chao Zhang, Jingbo Shang, Lance Kaplan, Jiawei Han. ACM SIGKDD Conference on Knowledge Discovery and Pattern Mining (KDD), 2019

Honors & Awards

- Math Contests** **Champaign, IL**
- 2nd Place Locally, 6.5% Nationally in **Virginia Tech Math Contest** October 2019
- 1st Place Locally, 8.8% Nationally in **Virginia Tech Math Contest** October 2018
- 4th Place in **Undergraduate Mathematics Contest** February 2018
- 6th Place Locally, 8% Nationally in **Virginia Tech Math Contest** October 2017
- 4th Place in **Mock Putnam Mathematics Contest** September 2017