

SABRINA MAI

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EDUCATION

University of California, Irvine, Irvine, CA
Doctor of Philosophy in Sociology, May 2025

September 2019 - Present
Overall GPA: 3.7

University of Central Florida, Orlando, FL
Bachelor of Science in Mathematics, May 2019
Minor in Sociology
Member of Pi Mu Epsilon

August 2015 - May 2019
Overall GPA: 3.6

RESEARCH EXPERIENCE

Networks, Computations, and Social Dynamics Lab (NCASD), University of California Irvine

September 2019 - Present

Hazards, Emergencies, and Informal Online Communications (HEROIC) Project

- Implement machine learning and natural language processing methods for analyzing large corpuses of text
- Developed mathematical frameworks for understanding message interactions
- Prepare manuscripts for publications
- Attend weekly project and lab meetings to collaborate and present ongoing research

RESEARCH INTERESTS

Natural Language Processing, Analysis of Crisis and Disaster Communications, Social Network Analysis, Mathematical Sociology, Computational Social Sciences

Department of Mathematics, University of Central Florida

May 2018 - June 2019

NSF-Funded Research, Honors in the Major Research

- Assisted Dr. Zhisheng Shuai with mathematical research for NSF funded research project Collaborative Research: Persistence, Stability and Control of Populations in Heterogeneous Networks
- Researched literature relevant to thesis
- Attended weekly meetings to discuss research progress and concepts

TEACHING EXPERIENCE

Teaching Assistant, School of Social Sciences, University of California, Irvine

Fall 2020-Present (11 Quarters)

- *Courses*: Statistics for the Social Sciences Series, Business Decisions, Computer Research for the Social Sciences

- Lead weekly lab/discussion sections to supplement lecture sections
- Graded assignments for 60+ undergraduate social science students
- Met with students during weekly office hours and appointments to discuss course materials and academic matters
- Held review sessions for students as an additional responsibility not required by the teaching professor

PUBLICATIONS

Renshaw, S. L, **Mai, S.**, et al. (2021). “Cutting Through The Noise: Predictors of Successful Online Message Retransmission In The First 8 Months Of The COVID-19 Pandemic”. *Health Security*, 19(1), 31-43. <https://doi.org/10.1089/hs.2020.0200>

“A Rigorous Analysis on Edge-Based Compartmental Models,” **Mai, S.**, Honors Undergraduate Theses. 537. <https://stars.library.ucf.edu/honorsthesis/537>

WORKS IN PROGRESS

Under Review

“Hearts for Hazards: A Framework For Understanding Relationships Between Message Interactions,” **Mai, S.**, Renshaw, S.L., Sutton, J., Butts, C., Under Review in the *Journal of Mathematical Sociology*

In Progress

“Semantic Networks of Official COVID-19 Communications”, **Mai, S.**, Renshaw, S.L., Sutton, J., Butts, C., for submission to the *Journal of Mathematical Sociology*

“A Rigorous Analysis on Edge-Based Compartmental Models,” **Mai, S.**, Carlson, K., Shau, Z., manuscript for submission to the *Journal of Mathematical Biology*

PRESENTED WORKS

American Sociological Association Annual Meeting: Text as Data and Measurement, Philadelphia, Pennsylvania August 2023

“*Semantic Networks of Official Communications During COVID-19*”

Sabrina Mai, University of California Irvine; Scott L. Renshaw; Jeanette Sutton, University of Albany; Carter T. Butts, University of California Irvine

International Sunbelt Social Networks Conference: Words and Networks, Portland, Oregon June 2023

“*Semantic Networks Modeling of Official Communications During COVID-19*”

Sabrina Mai, University of California Irvine; Scott L. Renshaw; Jeanette Sutton, University of Albany; Carter T. Butts, University of California Irvine

SoCal ML & NLP Symposium 2022: Poster Session, Santa Barbara, California November 2022

“*Causal Narrative Networks of Official COVID-19 Communications*”

Sabrina Mai, University of California Irvine; Scott L. Renshaw; Jeanette Sutton, University of Albany; Carter T. Butts, University of California Irvine

Annual Meeting of the American Sociological Association: Advances in Mathematical Sociology, Los Angeles, California July 2022

“Hearts for Hazards: “Favorites” as A Means Of Message Interaction”

Sabrina Mai, University of California Irvine; Scott L. Renshaw; Jeanette Sutton, University of Albany; Carter T. Butts, University of California Irvine

Joint Preconference: Section on Rationality and Society; Section on Mathematical Sociology, Los Angeles, California July 2022

“Changing Topics: Causal Narrative Networks of Official COVID-19 Communications”

Sabrina Mai, University of California Irvine; Scott L. Renshaw; Jeanette Sutton, University of Albany; Carter T. Butts, University of California Irvine

International Sunbelt Social Networks Conference, Cairns, Australia June 2022

“Changing Topics: Causal Narrative Networks of Official COVID-19 Communications”

Sabrina Mai, University of California Irvine; Scott L. Renshaw; Jeanette Sutton, University of Albany; Carter T. Butts, University of California Irvine

Annual Meeting of the American Sociological Association, Virtual Format Aug. 2021

“Changing the Subject: Causal Relationships Between COVID-19 Topics”

Sabrina Mai, University of California, Irvine; Scott L. Renshaw; Carter T. Butts; Jeanette Sutton, University of Kentucky

Annual Meeting of the American Sociological Association, Virtual Format Aug. 2021

“Inequalities of an Infodemic: Socio-Demographic Influences on Message Retransmission During the COVID-19 Pandemic”

Scott Leo Renshaw, University of California-Irvine; **Sabrina Mai**; Elisabeth Dubois; Jeannette Sutton, University of Kentucky; Carter T. Butts, University of California-Irvine

Annual Meeting of the American Sociological Association, *Meeting Cancelled* Aug. 2020

“Weathering the Inequality: Audience Demographics and Message Passing”

Scott Leo Renshaw, University of California-Irvine; **Sabrina Mai**; Jeannette Sutton, University of Kentucky; Carter T. Butts, University of California-Irvine

International Sunbelt Social Networks Conference, *Meeting Cancelled* July 2020

“Winning Favors: The Factors of Hazard Message Favorability on Twitter”

Sabrina Mai, University of California-Irvine; Scott Leo Renshaw; Jeannette Sutton, University of Kentucky; Carter T. Butts, University of California-Irvine

International Sunbelt Social Networks Conference, *Meeting Cancelled* July 2020

“Dynamics of Electronic Information Exchange During Hazards: Analyzing the National Weather Service’s NWSChat”

Scott Leo Renshaw, University of California-Irvine; **Sabrina Mai**; Jeannette Sutton, University of Kentucky; Carter T. Butts, University of California-Irvine

Student Scholar Symposium at the University of Central Florida, Orlando, FL April 2019

“Rigorous Analysis of an Edge-Based Model”

Sabrina Mai, University of Central Florida; Keith Carlson; Zhisheng Shuai

Joint Mathematics Meeting: Poster Session, Baltimore, Maryland March 2019

“Rigorous Analysis of an Edge-Based Model”

Sabrina Mai, University of Central Florida; Keith Carlson; Zhisheng Shuai

Mathematical Biology Seminar, University of Central Florida, Orlando, FL Nov. 2018

“A rigorous analysis on the edge-based compartmental model of Miller and Volz”

Sabrina Mai, Keith Carlson, Zhisheng Shuai

Mathematical Biology Seminar, University of Central Florida, Orlando, FL April 2018

“Miller and Volz’s edge-based compartmental disease models”

Sabrina Mai

FELLOWSHIPS AND AWARDS

Graduate Student Fellow, Center for Networks and Relational Analysis, 2021 - Present
Outstanding Project, 2019 Student Scholar Symposium at the University of Central Florida
Burnett Honors College Student, University of Central Florida
University of Central Florida Provost Scholar (\$30,000)

TECHNICAL STRENGTHS

Computer Languages	R, Python
Software & Tools	RStudio, Unix/Linux Systems, LaTeX, Mathematica, Maxima

ACADEMIC LEADERSHIP AND SERVICE

Organizer for Social Network Research, Center for Networks and Relational Analysis,
University of California Irvine Jan. 2022 - Present

Graduate Mentor, Peer Mentorship Program, Department of Sociology,
University of California Irvine Sept. 2021 - June 2022

Member, Welcome Committee, Department of Sociology,
University of California Irvine March 2020

Member, Pi Mu Epsilon, University of Central Florida April 2019 - Present

Vice President, Collegiate Mathematical Society,
University of Central Florida Sept. 2017 - May 2019

COMPETITIONS

Student Scholar Symposium at the University of Central Florida, Outstanding Project 2019

Joint Mathematics Meeting: Poster Session, Successful Participant 2019

COMAP Interdisciplinary Contest in Modeling, Successful Participant 2018

COMAP Interdisciplinary Contest in Modeling, Successful Participant 2017

RELEVANT NON-ACADEMIC EMPLOYMENT HISTORY

Private Tutor, A+ Tutoring of Central Florida, Orlando, FL

May 2018 - August 2019

- Provided individual mathematics tutoring to K-12 students
- Evaluated student understanding of concepts and customize learning plan accordingly
- Regularly communicated with parents about students progress and understanding
- Processed payment transactions
- Open/close operations

Instructor, Mathnasium of Waterford Lakes, Orlando, FL

June 2017 - May 2018

- Provided math instruction to students from K-12 using the Mathnasium method
- Encouraged creative learning methods to be utilized with problem-solving
- Evaluated and tracked student progress
- Regularly spoke to parents regarding the student's progress

SERVICE

Peer Mentor, The Mentor Collective, University of California Irvine

September 2021 - June 2023

- Mentored incoming graduate students across disciplines on issues with graduate school
- Certified through the Mentor Collective

Peer Mentor, Sociology Department, University of California Irvine

September 2021 - June 2023

- Mentored first- and second-year Sociology PhD students to assist in transitioning to graduate school life

Science Fair Judge, Seminole County Regional Science Fair

February 2021

- Reviewed high school students' science fair projects in submission for the International Science and Engineering Fair
- Assigned project scores based on research merit

Volunteer, Orlando Food Not Bombs, Orlando, FL

June 2018 - August 2019

- Served food to the homeless population of downtown Orlando at weekly sharings
- Transported produce and food from distributors to volunteers for processing
- Prepared and cooked food for weekly sharings

Science Fair Judge, Seminole County Regional Science Fair

February 2019

- Reviewed high school students' science fair projects in submission for the International Science and Engineering Fair
- Assigned project scores based on research merit

Science Fair Judge, Crooms Academy of Information Technology

December 2018

- Reviewed high school students' science fair projects in submission for the International Science and Engineering Fair
- Assigned project scores based on research merit

Volunteer, UCF Arboretum, Orlando, FL

Aug. - Dec. 2016

- Assisted in maintaining arboretum gardens weekly

Student Instructor,

Aug. - Dec. 2015

Burnett Honors College, University of Central Florida, Orlando, FL

- Taught success and life skills to first graders at an Orange County Title I school
- Prepared lesson plans and course materials

RESEARCH INTERESTS

- Mathematical sociology
- Natural Language Processing (NLP)
- Social network analysis
- Emergency communication networks
- Computational methods
- Mathematical modeling of complex dynamical networks
- Mathematical epidemiology models
- Stochastic modeling techniques