Theresa Migler

Department of Computer Science
California Polytechnic State University
Frank Pilling Building, 14-226
San Luis Obispo, CA, 93407
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EDUCATION

Ph.D., Computer Science, June 2014
Oregon State University, Corvallis
Major: Computer Science
Minor: Mathematics
Advisor: Glencora Borradaile

MS, Computer Science, June 2013
Oregon State University, Corvallis
Major: Computer Science

MS, Mathematics, December 2006
California Polytechnic University, San Luis Obispo
Major: Mathematics

BS, Mathematics, June 2004
California Polytechnic University, San Luis Obispo
Major: Mathematics
Minor: Philosophy

EMPLOYMENT

Assistant Professor Fall 2018 - Present
California Polytechnic State University, Computer Science Department

- CSC 348 - Discrete Structures
- CSC 349 - Design and Analysis of Algorithms
- CSC 445 - Theory of Computation
- CSC 549 - Advanced Algorithm Design and Analysis
- CSC 570 - Advanced Algorithmic Graph Theory

Visiting Professor Fall 2018 - Winter 2019
Munich University of Applied Science, Computer Science and Mathematics

- Algorithms and Datastructures I
- Graduate Graph Theory

Lecturer Fall 2015 - Spring 2018
California Polytechnic State University, Computer Science Department

- CPE 101, 103 - Fundamentals of Computer Science
- CSC 348 - Discrete Structures
- CSC 349 - Design and Analysis of Algorithms
- CSC 448 - Bioinformatics Algorithms

Lecturer Fall 2014 - Spring 2015
University of California Santa Cruz, Jack Baskin School of Engineering

- CMPS 5P - Introduction to Python
- CMPS 10 - Introduction to Computer Science
- CMPS 17 - Social Networks

Lecturer Summer 2012, 2014
Oregon State University, EECS Department
- CS 325 - Undergraduate Algorithms

Research Fellow Winter 2012
Brown University, Department of Computer Science
- Complexity Theory

Teaching Assistant Fall 2010 - Spring 2014
Oregon State University, EECS Department
- CS 325 - Undergraduate Algorithms
- CS 381 - Undergraduate Programming Languages
- CS 515 - Graduate Algorithms

Teaching Assistant Fall 2008 - Spring 2010
Oregon State University, Math Department
- MATH 111, 112, 251 - Calculus and Pre-Calculus

Lecturer Fall 2006 - Spring 2008
California Polytechnic State University, Math Department
- Math 116, 117, 118, 119, 141, 142, 143 - Calculus and Pre-Calculus

Lecturer Fall 2006 - Spring 2008
Cuesta Community College, Math Department
- Math 23, 27, 32 - College Algebra and Pre-Calculus

Teaching Associate Fall 2004 - Spring 2006
California Polytechnic State University, Math Department
- Math 116, 117, 118, 119 - Pre-Calculus

AWARDS AND HONORS

Council for Undergraduate Research Engineering Division Mentor Award 2023

Northrop Grumman Early Career Excellence in Teaching Award 2021

M. Lehman Mathematics Educator Scholarship 2006

National Science Foundation Scholarship 2005-2006

College of Science and Mathematics Senior Recognition Award Contributions to the Objectives and Public Image of the University 2004

PEER-REVIEWED CONFERENCE PAPERS

Iris Ho*, Paul Anderson, Jean Davidson, Jeffrey Lotz, Theresa Migler
- An Evaluation of Graph Based Approaches for Clustering: a Case Study in Chronic Pain Categories
  The French Regional Conference on Complex Systems, 2024

Paul Anderson, Damon Lin*, Jean Davidson, Theresa Migler, Iris Ho*, Cooper Koenig*, Madeline Bittner*, Samuel Kaplan*, Mayumi Paraiso*, Nasreen Buhn*, Emily Stokes*, Tony Hunt, Glen Ropella, and Jeffrey Lotz
- Bridging Domains in Chronic Lower Back Pain: Large Language Models and Ontology-driven Strategies for Knowledge Graph Construction
  11th International Work-Conference on Bioinformatics and Biomedical Engineering, 2024

Andrew Estrada*, Colin Chun*, Mitashi Parikh*, Zoë Wood, Theresa Migler

- Geographic Distance and Equity Within a Collaboration Network
  The French Regional Conference on Complex Systems, 2024

Rachel Izenson*, Lauren Allen*, Deric Alvarez*, Zoe Chen*, Cameron Hardy*, Tony Li*, Julissa Romero*, Julia Ye*, Zoë Wood, Theresa Migler

- Investigation of Social Networks In University upon Belongingness and Mental Health
  The French Regional Conference on Complex Systems, 2024

Galen Borgman*, Harumi Hokari*, Noah Otsuka*, Theresa Migler

- Exploring Inequity in Park Usage Amidst the COVID-19 Pandemic
  The IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining, 2023

Shosei Anegawa*, Iris Ho*, Khoa Ly*, James Rounthwaite*, and Theresa Migler.

- Learned Monkeys: Emergent Properties of Deep Reinforcement Learning Generated Networks.
  Complex Networks XIV, 2023

Mugizi Rwebangira, Theresa Migler, Zoë Wood

- A Study of Research Collaborations at a Teaching University with a Focus on Diversity
  Conference of the American Society for Engineering Education, Pacific Southwest Section, 2023

Jiwon Lee*, Ayaan M. Kazerouni, Christopher Siu and Theresa Migler

- Exploring the Impact of Cognitive Awareness Scaffolding for Debugging in an Introductory Programming Class
  SIGCSE '23: Proceedings of the ACM Technical Symposium on Computer Science Education, 2023

Galen Borgman*, Harumi Hokari*, Noah Otsuka*, Theresa Migler

- Disparity in Park Usage During the COVID-19 Pandemic
  Computer Science Conference for CSU Undergraduates, 2023

Jason Tran*, Leticia Siqueira*, Meghan Tran*, Brandon Tat*, Zoë Wood, Jane Lehr, Mugizi Rwebangira, Theresa Migler

- Conference Talk - Rags to riches: the teacher-scholar model in action at California Polytechnic State University from 1990-2020 for computing researchers
  Bibliometrics and Research Impact Community, BRIC, 2022

Anurag Kuppala*, Vedant Mehta*, and Theresa Migler

- Revisiting the Courteous Theatergoers Problem with Applications to Pandemic Seating
  Computer Science Conference for CSU Undergraduates, 2022

Maya Zeng*, Zoë Wood, Theresa Migler

- Poster - Data and Design of the Mapping and Visualization of the Academic Collaborations Project

Richard Tapia Celebration of Diversity in Computing Conference - ACM, TAPIA, 2021

Ryan Solorzano* and Theresa Migler

- Modeling the Spread of COVID-19 Over Varied Contact Networks
  Tenth International Conference on Complex Networks and Their Applications 2021

Viet Nguyen*, Paul Anderson, Alexis Pasulka and Theresa Migler

- Analysis of the SLO Bay Microbiome from a Network Perspective
  Tenth International Conference on Complex Networks and Their Applications 2021

Logan McNichols*, Steven Pineda*, Emma Sauerborn*, Brandon Tat*, Kevin Yoo*, Jane Lehr, Zoë Wood, Theresa Migler

- MAVAC: Mapping and Visualization of Academic Collaborations with a Focus on Diversity
  International Conference on Complex Networks, 2021

Viet Lien Nguyen*, Alexis Pasulka, Theresa Migler

- A Literature Survey Addressing Correlation Networks for Microbiomes
  Computer Science Conference for CSU Undergraduates, 2021

Jonathan Schreiber* and Theresa Migler

- Original Complexity Reductions from Set Packing to Clique from Hitting Set to Satisfiability
  Computer Science Conference for CSU Undergraduates, 2021

Ryan Zesch* and Theresa Migler

- Packing Edge-Disjoint T_2 Trees in Constrained Bipartite Graphs
  Computer Science Conference for CSU Undergraduates, 2021

Eric Jiaming Newcomer*, Elena Rose Fowler*, Theresa Migler

- A Tutorial on How Undergraduate Computer Science Students Can Support Nonprofits
  Computer Science Conference for CSU Undergraduates, 2021

Lauren Nakamichi*, Theresa Migler, Zoë Wood

- An Analysis of Four Academic Department Collaboration Networks with Respect to Gender
  International Conference on Complex Networks and Their Applications, 2020

Kirsten Mork*, Theresa Migler, Zoë Wood

- Introducing Computing to a Cohort of Incarcerated Youth
  SIGCSE '20: Proceedings of the 49th ACM Technical Symposium on Computer Science Education, 2020

Conor Carroll*, Nupur Garg*, Theresa Migler, Barbara Walker, and Zoë Wood

- Mapping and Visualization of Publication Networks of Public University Faculty in Computer Science and Electrical Engineering
  Proceedings of 35th International Conference on Computers and Their Applications, 2020

Logan McNichols*, Gabriel Medina-Kim*, Viet Lien Nguyen*, Christian Rapp*, Theresa Migler

- Gender's Influence on Academic Collaboration in a University-Wide Network
  International Conference on Complex Networks and Their Applications, 2019

Christopher Siu* and Theresa Migler

- Vaccination Strategies on a Robust Contact Network
  International Conference on Complex Networks and Their Applications, 2019

Sean Gonzales* and Theresa Migler

- The Densest k Subgraph Problem in b-Outerplanar Graphs
  International Conference on Complex Networks and Their Applications, 2019

Iris Kohler*, Theresa Migler, Foaad Khosmood.

- Composition of Basic Heuristics for the Game 2048
  FDG '19 Proceedings of the 14th International Conference on the Foundations of Digital Games, 2019

Theresa Migler and Lizabeth Schlemer.

- Engagement in Practice: Teaching Introductory Computer Programming at County Jails
  American Society for Engineering Education - ASEE, 2018

Theresa Migler, Glencora Borradaile, and Gordon Wilfong.

- Density Decompositions of Networks
  International Conference on Complex Networks - CompleNet, 2018

Theresa Migler, Glencora Borradaile, and Gordon Wilfong.

- Random Network Models Based on Density
  The International Conference on Complex Networks and Their Applications, 2018

PEER-REVIEWED JOURNAL PAPERS

Glencora Borradaile, Theresa Migler, and Gordon Wilfong.

- Density Decompositions of Networks
  Journal of Graph Algorithms and Applications, 2019

Theresa Migler.

- Lower Bounds for Testing Digraph Connectivity with One-Pass Streaming Algorithms.
  IEEE Letters of the Computer Society, 2018

Glencora Borradaile, Jennifer Iglesias, Theresa Migler, Antonio Ochoa, Gordon Wilfong, and Lisa Zhang.

- Egalitarian Graph Orientations.
  Journal of Graph Algorithms and Applications, 2017

Theresa Migler, Kent Morrison, Mitchell Ogle.

- How Much does a Matrix of Rank k Weigh?
  Mathematics Magazine, 2006

INVITED PROFESSIONAL TALKS

"Graphs as a Guide to Research, Collaboration, and Cough Prevention"
STEM-NET, Virtual
November 16, 2022

"Graphs as a Guide to Research, Collaboration, and Cough Prevention"
Sonoma State University, Sonoma, CA
November 8, 2022

"Navigating Collaboration and Disease Spread through Graphs"
Willamette University, Salem, Oregon
October 13, 2022

GRANTS

"Forging New Exchange Links in Chile to Support Student Study and Expand Research Collaboration"
PI
Fulbright U.S. Scholar Program (external, pending decision - submitted September 2023) $14,000

"Semi-Automated Knowledge Graph Construction for Mechanistic cLBP Models"
Co-PI (Paul Anderson PI)
National Institutes of Health (external, awarded) $50,000

"Bridging Worlds Toward Inclusive Educational Systems: A Transdisciplinary Framework"
Co-PI (Enrica Costello PI)
Google Award for Inclusion Research Program
(external, declined - submitted July 2022) $60,000

"Do Ethnic Enclaves Prevent Breast Cancer in Latina Women?"
Co-PI (Marilyn Tseng PI)
California Breast Cancer Research Program (external, awarded) $100,000

"MAVAC: Mapping and Visualization (of) Academic Collaborations with a focus on researcher diversity"
PI (with Zoë Wood and Jane Lehr)
The Public Interest Technology Challenge Grants (external, declined - submitted July 2021) $90,000

"Governance, Norms and ValuesResearch on the Future Internet"
Co-PI (Bruce DeBruhl PI, Zachary Rentz Co-PI)
Knight Foundation (external, declined - submitted March 2020) $168,284

"Comparing academic collaboration networks (with a lens on diversity)"
Co-PI (Zoë Wood Co-PI)
Research, Scholarly, and Creative Activities Grant Program (internal, awarded 2020-2021) $18,000

"Bioinformatics Cross-Disciplinary Studies Minor"
Co-PI (Edward T. Himelblau, PI)
Center for the Advancement of Women in Technology (external, awarded 2017-2021)
$400,000

COURSES TAUGHT AND DEVELOPED

Courses Taught

- CSC 248 - Discrete Structures
- CSC 349 - Design and Analysis of Algorithms
- CSC 445 - Theory of Computation
- CSC 549 - Advanced Algorithm Design and Analysis
- CSC 570 - Advanced Algorithmic Graph Theory

Courses Developed

- CSC 549 - Advanced Algorithm Design and Analysis
- CSC 570 - Advanced Algorithmic Graph Theory

Courses Developed/Modified for Semester Conversion

- CSC 3445 - Theory of Computation
- CSC 3449 - Algorithms and Complexity
- CSC 5445 - Advanced Theory of Decidability and Reducibility
- CSC 5447 - Advanced Algorithmic Graph Theory
- CSC 5449 - Advanced Algorithm Design and Analysis

STUDENT SUPERVISION

MS Students Defended

- Deon Lillo *Assessing the Resilience of Mycorrhizal Networks Following Central Tree Removal* Spring 2023
- Jiwon Lee *Exploring the Impact of Cognitive Awareness Scaffolding for Debugging in an Introductory Computer Science Class* Spring 2022
- Viet Lien Nguyen *Analysis of the SLO Bay Microbiome from a Network Perspective* Summer 2021
- Iris Kohler *Graph Theoretical Modelling of Electrical Distribution Grids* Spring 2021
- Joshua Boe *Proximity Grapher: an iOS app for conducting proximity tracing studies* Spring 2021
- Ryan Solorzano *Modeling the Spread of Covid-19 Over Varied Contact Networks* Spring 2021
- Stephen Hung *Modeling COVID-19 Spread using an Agent-Based Network* Spring 2021
- Lauren Nakamichi *Analyzing Gender in the Cal Poly Collaboration Network* Spring 2020
- Christopher Siu *Simulating Epidemics and Interventions on High Resolution Social Networks* Spring 2019
- Michael Cantrell *Observations of the Copenhagen Networks Study* Spring 2019
- Siddhant Kahal *Bird Abundance at Bird Feeders in Response to Temperature, Wind Speed, and Precipitation during the Winter Season* Spring 2018

Current MS Students

- Iris Ho
- Rachel Izenson

Current Senior Project and Independent Study Students During Period of Review

- Elissa Covarrubias
- Shayan Daijavad
- Gordon Luu
- Thien Tran

BEACoN Students

- Colin Chun
- Andrew Estrada
- Mitashi Parikh

Cal-Bridge Students

- Jairo Gonzalez
- James Rounthwaite
- Nayana Tiwari

DREU Students

- Maya Zeng
- Josie O'Harrow

Past Senior Project, Independent Study, and SURP Students

- Shosei Anegawa
- Khoa Minh
- James Rounthwaite
- Hurami Hokari
- Jason Tran
- Colin Chun
- Evan Diaz
- Iris Ho
- Spencer Wong
- Allen Yu
- Meghan Tran
- Galen Borgman
- Anurag Kuppala
- Hannah May
- Josh Codrescu
- Vedant Mehta
- Noah Otsuka
- Tyler Lian
- Polina Volnuhina
- Thomas Wrappe
- Andrew Keshishian
- Jasmine Patel
- Sreelakshmi Kariyadan
- Nicole Hill
- Nicholas Balestrino
- Nicole Griffith
- Evan Shui
- Selynna Sun
- Ryan Zesch
- Eric Newcomer
- Viet Nguyen
- Joshua Boe
- Ryan Solarzano
- Alexander Bailey
- Samuel Chase
- Sean Gonzales
- David James
- Sharon Kuang
- Pranshul Lakhanpal
- Logan McNichols
- Gabriel Medina-Kim
- Mitchell Overfield
- Jonathan Pautz
- Jasmine Patel
- Christian Rapp
- Jonathan Schreiber
- Dmitriy Timokhin
- Collin Wong
- Samuel Chase
- Daniel Yao
- Timothy Jyung
- Lohit Vankineni

Students Involved in Jail Project

- Cassie Hamilton
- Caleb Kim
- Yusuf Bahadur
- Terry Wambolt
- Larry Hu
- Chris Moranda
- Abby Schmiedt
- Hayley Cushing

TRAINING ACTIVITIES

ACUE Microdential - Designing Learner- Centered and Equitable Courses

Winter 2023

LGBTQ+ Ally Training

Winter 2023

SERVICE

College of Engineering Representative for the Faculty Advisory Committee on the Library	Fall 2022 - Present
Belongingness in Technology Faculty Advisor	Spring 2022 - Present
Cal-Bridge Mentor	Spring 2021 - Present
New CSSE Faculty Mentor	Fall 2021 - Present
BEACoN Mentor/Research Mentor	Fall 2019 - Spring 2023
CSSE Hiring Committee	Fall 2021 - Winter 2022
CSSE Colloquium (Banquet) Committee Chair	Fall 2019 - Present
Diversity and Inclusion Committee Member	Fall 2019 - Present
Newman Center Board Member	Fall 2019 - Present
CSCSU Program Committee	Winter 2022
CRW-A CREU Mentor	Summer 2020, Summer 2021
Hack4Impact Faculty Advisor	Fall 2019 - Spring 2021
WISH Faculty Advisor	Fall 2020 - Spring 2021
Creator of Computer Program at Local Jails	Summer 2015 - Present
Indian Student Association Faculty Advisor	Fall 2016-2017
Wikipedia Author/Editor	2011-Present
Maryknoll Lay Volunteer	Summer 2012
Get on the Bus- Bus Coordinator	2007-2008