

EDUCATION	<b>University of Illinois at Urbana-Champaign</b> <i>Doctor of Philosophy, Mathematics</i> Researching decidability of logical theories (adviser: Philipp Hieronymi) <b>University of Illinois at Urbana-Champaign</b> <i>Master of Science, Applied Mathematics</i> Concentration in Computational Science and Engineering (CSE) <b>University of Florida</b> <i>Bachelor of Science, Mathematics</i> Degree conferred <i>summa cum laude</i> · Honors Program · GPA 3.97 Honors thesis <i>Measuring Congressional district gerrymandering</i> (adviser: Kevin Knudson)	<i>Champaign, IL</i> Expected May 2023 <i>Champaign, IL</i> May 2020 <i>Gainesville, FL</i> May 2018
INTERESTS	logical complexity, model theory, computability theory, formal verification, tame geometry, ensemble learning, numerical analysis, automata theory, quantum computing, gerrymandering	
RESEARCH / WORK	<b>Microsoft Research</b> <i>Research Intern, Quantum Programming</i> <b>Sandia National Laboratories</b> <i>Mathematics and Analytics Research &amp; Development Intern</i> · Crafted visualization tools for network analysis and employed SimGNN, a graph convolutional network, to analyze similarities between simulated temporal networks · Constructed graph theory-based ensemble method in Python for object detection with FAIR's Detectron2, improving average precision by at least 6% over baseline models <b>Applied Research Laboratories, University of Texas at Austin</b> <i>Research Engineering Scientist Associate</i> · Researched quantum computing and error correction under the direction of Brian La Cour · Implemented cellular-automaton decoder for the color code, using local measurement-based information to correct qubit errors (thresholds at least 7.0% for $X$ and 0.4% for $Z$ errors) via code lattices in Python <b>Illinois Geometry Lab, University of Illinois at Urbana-Champaign</b> <i>Graduate Research Mentor</i> · Researched logic and automatic theorem proving while managing a small team of undergraduate researchers under the direction of Philipp Hieronymi · Harnessed MSR's proof assistant Lean to verify basic mathematical proofs; employed Walnut to mechanize arithmetic operations for Ostrowski numeration systems <b>Metric Geometry and Gerrymandering Group</b> <i>Voting Rights Data Institute (VRDI) Fellow</i> · Analyzed vast demographic and voting datasets through visualization, topological data analysis, and Markov chain Monte Carlo methods for districting plans under Moon Duchin · Prototyped <i>Districtr</i> web app in Python to facilitate community of interest self-identification <b>Budapest Semesters in Mathematics, St. Olaf College</b> <i>Study Abroad Student, Eötvös Loránd University</i> · Conducted research in graph rigidity—specifically, unit disk graphs and compactness in low-dimensions—under the direction of Tibor Jordán <b>University of Washington</b> <i>NSF Research Experience for Undergraduates (REU) Participant</i> · Conducted research on the inverse problem for electrical networks—specifically, graph embeddings on surfaces of extreme genera—under the direction of James Morrow	<i>Redmond, WA</i> May 2021 - Aug 2021 <i>Albuquerque, NM</i> May 2020 - Aug 2020 <i>Austin, TX</i> June 2019 - Aug 2019 <i>Champaign, IL</i> Aug 2018 - May 2019, Aug 2020 - Dec 2020 <i>Cambridge, MA</i> June 2018 - July 2018 <i>Budapest, Hungary</i> June 2017 - Aug 2017 <i>Seattle, WA</i> June 2016 - Aug 2016
SKILLS	Intermediate: Python, LaTeX Basic: Git, SQL, R, MATLAB, QGIS, Java, C++, Lean	

AWARDS	UIUC List of Teachers Ranked As Excellent (Outstanding)      Spr 2019, Fall 2019, Spr 2020 Anderson Scholar, Highest Distinction      Oct 2016 Benacquisto Scholar      Aug 2014 - May 2018 Bright Futures Florida Academic Scholar      Aug 2014 - May 2018 National Merit Scholar      June 2014
TEACHING	<p><b>University of Illinois at Urbana-Champaign</b>      <i>Champaign, IL</i>  <i>Graduate Teaching Assistant, Department of Mathematics</i>      Aug 2018 - Present</p> <ul style="list-style-type: none"> <li>· Lead discussion and Python programming sections for students in Math 415 Linear Algebra</li> <li>· Create educational material for and teach an active-learning classroom as part of the Merit program, targeted to support top scholars from underrepresented groups in STEM</li> <li>· Led weekly discussion sections for students in Math 220/221 Calculus I and Math 231 Calculus II; graded quizzes and exams; held weekly tutoring and office hours</li> </ul> <p><i>Inmas Teaching Assistant</i>      Jan 2021 - Feb 2021</p> <ul style="list-style-type: none"> <li>· Developed and led programming tutorials for NumPy library in Python; assisted general Python programming workshop for graduate students</li> </ul> <p><b>University of Florida</b>      <i>Gainesville, FL</i>  <i>Undergraduate Teaching Assistant, Dept. of Computer Science &amp; Eng.</i>      Aug 2016 - May 2018</p> <ul style="list-style-type: none"> <li>· Led weekly discussion sections for students in COT3100 Applications of Discrete Structures</li> </ul>
PROFESSIONAL	<p><b>University of Michigan</b>      <i>Ann Arbor, MI</i>  <i>LG&amp;TBQ Geometry and Topology Conference</i>      June 2019</p> <p><b>University of Illinois at Urbana-Champaign</b>      <i>Champaign, IL</i>  <i>Program for Interdisciplinary and Industrial Internships at Illinois</i>      May 2019</p> <ul style="list-style-type: none"> <li>· Completed computational bootcamps in linear algebra, statistical analysis, R, and Python</li> </ul> <p><b>Out for Undergrad</b>      <i>San Francisco, CA</i>  <i>Out for Undergrad Technology Conference (OUTC)</i>      Sept 2015, Sept 2016, Sept 2017</p> <ul style="list-style-type: none"> <li>· Workshopped allyship and leveraging queer identity in the tech industry at multi-day summit</li> </ul> <p><b>Telluride Association</b>      <i>Ann Arbor, MI</i>  <i>Telluride Association Summer Program (TASP)</i>      June 2013 - Aug 2013</p>
TALKS	<p><b>Sandia Machine Learning &amp; Deep Learning Workshop</b>      <i>Albuquerque, NM</i>  <i>“Ensemble learning with graph inference cliques”</i>      Aug 2020</p> <p><b>University of Illinois Computability Seminar</b>      <i>Champaign, IL</i>  <i>“When is scalar multiplication decidable?”</i>      Apr 2020</p> <p><b>Wolfram Research Summer School</b>      <i>Champaign, IL</i>  <i>“Measuring Congressional district meandering and gerrymandering”</i>      Nov 2019</p> <p><b>Telus World of Science, Unveiling the Universe Series</b>      <i>Vancouver, BC, Canada</i>  <i>“Extreme genera and other techniques of graph embeddings”</i>      Aug 2016</p>
SERVICE	<p><b>Association for Women in Mathematics</b>      <i>Champaign, IL</i>  <i>Member, University of Illinois Chapter</i>      Aug 2018 - Present</p> <p><b>Varsity Vocals</b>      <i>Chicago, IL</i>  <i>Judge, International Championship of Collegiate A Cappella</i>      Feb 2019 - Present</p>
INVOLVEMENT	<p><b>Gestalt</b>      <i>Gainesville, FL</i>  <i>Director of Music, Co-Founder</i>      May 2016 - Apr 2018</p> <ul style="list-style-type: none"> <li>· Created and directed a cappella group to 1<sup>st</sup> place at ICCA Quarterfinals and to Runner-up at ICCA Semifinal, SoJam, BOSS, and NACC competitions</li> <li>· Managed group and individual rehearsals, coordinated repertoire, and engineered production of two albums garnering 13 CARA nominations and 3 wins, including for “Best Debut Album”</li> </ul>