Sonia Cromp

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EDUCATION

University of Wisconsin, Madison WI   August 2021 - Present
Doctor of Philosophy in Computer Science   GPA 4.0

University of Pittsburgh, Pittsburgh PA   August 2017 - April 2021
Bachelor of Science in Computer Science,   GPA 3.9
Bachelor of Arts in Linguistics, Minor in Bosnian/Croatian/Serbian

Relevant Coursework: *Machine Learning, Deep Learning, Advanced Algorithms, Theory of Computation, Computer Vision, Applied AI, Optimization, Vector Calculus, Linear Algebra, Probability/Statistics*

PUBLICATIONS

Causal Omnivore: Fusing Noisy Estimates of Spurious Correlations
Dyah Adila, Sonia Cromp, Sicheng Mo, Frederic Sala
International Conference on Machine Learning 2022 Workshop on Spurious Correlations, Invariance, and Stability (ICML SCIS 2022)

Essay Revision and Corresponding Grade Change as Captured by Text Similarity and Revision Purposes
Sonia Cromp, Diane Litman
14th International Conference on Educational Data Mining (EDM 2021) Workshop for Undergraduates
Best Paper Award

Relaxed Skiplist for Concurrent Priority Queues
Sonia Cromp, Michael Spear
29th International Conference on Parallel Architectures and Compilation Techniques (PACT 2020)
Finalist, Association for Computing Machinery Student Research Competition

RESEARCH EXPERIENCE

Fusing Diffusion Models with Weak Supervision   September 2022 - Present
Research Assistant   *University of Wisconsin-Madison Department of Computer Sciences*
Exploring data augmentation techniques for very low-resource tasks whereby a generative diffusion model synthesizes additional training examples, which are then labeled automatically via weak supervision.

Game-Theoretic Techniques for Trust and Defense   September 2022 - Present
Research Assistant   *University of Wisconsin-Madison Department of Computer Sciences*
Collaborating with the United States Office of Naval Research to model attacker and defender relations in the face of deceptive cyberwarfare.

Generative Models with Less Data   January 2022 - Present
Research Assistant   *University of Wisconsin-Madison Department of Computer Sciences*
Designing a method to identify and improve synthesis of poorly-represented concepts in a generative model's latent space. Independent study with Dr. Frederic Sala.

Mitigating Impacts of Spurious Correlations in Neural Nets   August 2021 - December 2021
Independent Study   *University of Wisconsin-Madison Department of Computer Sciences*

Developed methods to identify and increase reliance on trained network weights that are activated by features causal to the label, improving classification performance. Advised by Dr. Sharon Li.

Machine Learning on Relational Databases   December 2019 - July 2021
Undergraduate Research Assistant   *University of Pittsburgh Computer Science Department*

Designed an algorithm for in-database approximated boosted regression trees, as well as a cache-oblivious algorithm for responding to functional aggregate queries. Research under Dr. Kirk Pruhs.

ArgRewrite Project   September 2018 - August 2021
Undergraduate Research Assistant   *University of Pittsburgh Computer Science Department*

Developed a classifier to predict students' reasons for making essay revisions, as a component of software that helps focus students on content- rather than surface-level revision. Work under Dr. Diane Litman.

Concurrent Priority Queue Design   May 2020 - November 2020
Undergraduate Research Fellow   *Lehigh University Computer Science & Engineering Department*

Designed, proved the quality of and implemented a relaxed concurrent priority queue backed by a skiplist. Research advisor Dr. Michael Spear.

Sentiment Analysis of Croatian News Articles   August 2019 - January 2020
Independent Study   *University of Pittsburgh Slavic Department*

Performed sentiment analysis on sentences from Croatian news articles annotated under the guidance of Bosnian/Croatian/Serbian Languages Professor Ljiljana Đurašković.

WORK EXPERIENCE

University of Wisconsin CS577 Introduction to Algorithms   August 2021 - May 2022
Graduate Teaching Assistant   *Madison, WI*

Coordinated on an 8-person instructional team to organize a 200-student upper-level algorithms course. Led weekly recitation sections, held office hours and prepared and graded course materials.

Global Wordsmiths   January 2020 - April 2021
Interpreter   *Pittsburgh, PA*

Interpreted between English and French or Bosnian/Croatian/Serbian during medical appointments.

French Translation Intern   January 2019 - April 2019

Translated nonprofits' documents to make them more accessible to immigrants and refugees.

Voci   August 2019 - December 2019
Software Development Intern   *Pittsburgh, PA*

Wrote software that processes numerals in Spanish phone call recordings. Voci is a technology start-up that analyzes speech data using deep learning.

DEPARTMENTAL SERVICE

Women of the ACM Chapter President and Undergraduate Mentor	July 2022 - Present
First Annual Incoming Graduate Student Mentoring Program Organizer	June 2022 - August 2022
Second Annual Student Research Symposium Organizer	April 2022
Graduate Student Advisory Committee Member	January 2022 - Present

AWARDS

University of Wisconsin-Madison Computer Sciences Summer Fellowship   June 2022 - August 2022
Provided 50% funding for a summer research assistantship with Professor Frederic Sala

University of Pittsburgh Slavic Department Award   April 2021
Awarded to graduating students whose work contributes to the advancement of Slavic studies

Foreign Language and Area Studies (FLAS) Fellowship   June 2019 - August 2019
Full funding for the advanced study of Bosnian/Croatian/Serbian language in Pittsburgh and abroad

University of Pittsburgh University Fellow   February 2019
Awarded to juniors, seniors and members of last year's graduating class with the highest 2% of GPAs

Summer Language Institute Scholarship   June 2018 - July 2018
Scholarship to study intensive beginning Bosnian/Croatian/Serbian at the University of Pittsburgh

Dean's Honors List   Fall 2017 - Spring 2021