

ELIZABETH SPAULDING

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EDUCATION

University of Colorado Boulder
Ph.D. in Computer Science
Advisor: James H. Martin

May 2025 (expected)

University of Nebraska-Lincoln
B.S. in Mathematics
Minors in Computer Science, Spanish

May 2019
GPA: 4.0/4.0

HONORS AND AWARDS

Lead Graduate Student Fellowship

August 2022

- Awarded to lead graduate students in the Center for Teaching & Learning at CU Boulder

David T. Spalding Graduate Teaching Fund Fellowship

February 2022

- Awarded to graduate students who went above and beyond in support of undergraduate education in response to the pandemic

Dean's Summer Research Fellowship

May 2020

- Fellowship awarded to outstanding incoming PhD students at CU Boulder

NASA Nebraska Space Grant Fellowship

August 2017

- Competitive grant for research in STEM fields

Dean's List, University of Nebraska-Lincoln

August 2015 - May 2019

High Scholar, University of Nebraska-Lincoln

August 2015 - May 2019

- Award given to students in the top 10% of their class

University of Nebraska Regents Scholarship

August 2015

- Full tuition scholarship to UNL

RESEARCH EXPERIENCE

Graduate Research Assistant
DARPA KAIROS Project

University of Colorado Boulder
December 2022 - Present

- Maintain the DARPA Wikidata Overlay: an ontology for information extraction which contains a mapping between PropBank rolesets and Wikidata events
- Curate ontology types, incorporating feedback from system developers, ontologists, and program managers
- Led a junior graduate student in developing similarity metrics for instantiated event structures extracted from newstext

CTO Intern
Joint End-to-end Semantic Proto-role Labeling

Bloomberg, L.P.
June 2022 - December 2022

- Built a joint end-to-end semantic proto-role labeling system using Bloomberg's in-house AI and NLP Python libraries
- Achieved competitive results with state-of-the-art models that were not end-to-end

- Published novel research at ACL 2023

Graduate Research Assistant

DARPA AIDA Project

University of Colorado Boulder

June 2020 - December 2022

- Facilitated transition from DARPA's manually-created program ontology to the Wikidata ontology
- Annotated news documents containing claims in the domain of COVID-19
- Developed event matching code in Java for team's entity and event clustering pipeline

Undergraduate Research Assistant

Theoretical and computational studies of wake turbulence

University of Nebraska-Lincoln

August 2017 - May 2019

- Funded by NASA Nebraska Space Grant Fellowship
- Studied theoretical fluid dynamics with an emphasis on boundary layer theory and flow separation
- Modeled fluid flow in Matlab and FEniCS

PUBLICATIONS

Elizabeth Spaulding, Gary Kazantsev, and Mark Dredze. 2023. Joint End-to-end Semantic Proto-role Labeling. In *Proceedings of the 61st Annual Meeting of the Association for Computational Linguistics (Volume 2: Short Papers)*, pages 723–736, Toronto, Canada. Association for Computational Linguistics.

Elizabeth Spaulding, Kathryn Conger, Anatole Gershman, Rosario Uceda-Sosa, Susan Windisch Brown, James Pustejovsky, Peter Anick, and Martha Palmer. 2023, June 20. The DARPA Wikidata Overlay: Wikidata as an ontology for natural language processing. Forthcoming in *Proceedings of the 15th International Conference on Computational Semantics (ICWS)*. The 2023 Joint ACL - ISO Workshop on Interoperable Semantic Annotation, Nancy, France.

Sarah Beemer, Zak Boston, April Bukoski, Daniel Chen, Princess Dickens, Andrew Gerlach, Torin Hopkins, Parth Anand Jawale, Chris Koski, Akanksha Malhotra, Piyush Mishra, Saliha Muradoglu, Lan Sang, Tyler Short, Sagarika Shreevastava, **Elizabeth Spaulding**, Testumichi Umada, Beilei Xiang, Changbing Yang, and Mans Hulden. 2020. Linguist vs. Machine: Rapid Development of Finite-State Morphological Grammars. In *Proceedings of the 17th SIGMORPHON Workshop on Computational Research in Phonetics, Phonology, and Morphology*, pages 162–170, Online. Association for Computational Linguistics.

TEACHING EXPERIENCE

CSCI 2824 - Discrete Structures

Graduate Part-time Instructor (Instructor of Record)

University of Colorado Boulder

Summer '23

- Prepared curriculum for sophomore/junior-level mathematics course
- Lectured a summer class of ~ 50 students
- Organized a team of two graduate students to support the course in grading, office hours, preparation/review of materials, and managing student questions

CSCI 5832 - Natural Language Processing

Course Manager

University of Colorado Boulder

Fall '21

- Developed new homework assignments integrating state-of-the-art techniques from current literature in computational linguistics

CSCI 1300 - Starting Computing (C++)

Graduate Teaching Assistant

University of Colorado Boulder

Fall '19; Fall '20; Spring '21

- Led weekly recitation, answered student questions, and graded students' homework

- Held weekly office hours and interview grading
- Developed new homework, projects, and recitation exercises
- From August 2020, served as a Lead TA. Additional duties included organizing instructional team, delegating weekly tasks, and training and mentoring other graduate students

CSCI 2270 - Data Structures (C++)

Graduate Teaching Assistant

University of Colorado Boulder

Spring '20

- Led weekly recitation, answered student questions, and graded students' homework and tests
- Held weekly office hours and interview grading
- Proofread weekly recitation exercises

MATH 103 - College Algebra and Trigonometry

Learning Assistant

University of Nebraska-Lincoln

Fall '17

- Guided students' learning by answering questions and encouraging mathematical discussion
- Led review sessions before each test

ENGINEERING EXPERIENCE

Software Engineer Intern

Atilika

June 2021 - August 2021

- Led the development of a Chrome extension that would be integrated into the company's Japanese language learning software, japanese.io
- Designed algorithm to locate English vocabulary words in sentences on webpages and replace them with their Japanese counterparts, using multilingual sentence embeddings for sense disambiguation

ACTIVITIES

CTL Lead TA, CU Boulder

August 2022 - Present

- Designed and presented an interactive workshop on equitable grading for the CTL
- Hosted departmental TA training events and monthly TA engagement meetings
- Collaborated with the other CTL lead to present a Computer Science workshop on teaching with student emotions in mind

UNL Aerospace Club - Rocketry Team

August 2016 - May 2019

- Designed and manufactured high-power rocket according to specifications set by competition each year
- Researched relevant concepts in aerodynamics, physics, and fluid dynamics to optimize rocket design
- Designed and programmed relevant software to specifications set by competition each year

UNL Aerospace Club - Treasurer

May 2018 - May 2019

- Managed funds from different sources for five different teams in club
- Designed and maintained budget
- Communicated with campus financial offices to ensure club's good standing

UNL Pi Mu Epsilon Math Club

August 2017 - May 2019

- Honor given to high-achieving undergraduate Mathematics majors
- Learned from lectures from distinguished mathematicians from across the country

SKILLS

Programming languages:

C++, C, Python, Java, Matlab, Javascript

Tools:

PyTorch, Tensorflow, Keras, Scikit-Learn, Pandas, spaCy, NLTK

Markup Languages:

L^AT_EX, HTML/CSS