

KEVIN ROS

kjros2@illinois.edu

EDUCATION

University of Illinois, Urbana-Champaign
Ph.D. Candidate in Computer Science

September 2020 - Present

Vassar College (GPA: 3.83)
B.A. in Computer Science
B.A. in Mathematics

September 2016 - May 2020

AWARDS

Outstanding Teaching Assistant

2021

University of Illinois, Urbana-Champaign

Nominated by faculty for dedication and great work during a teaching assistantship.

Saburo Muroga Endowed Fellowship

2020

University of Illinois, Urbana-Champaign

Awarded to outstanding graduate students in computer science.

Honorable Mention, NSF GRFP

2020

University of Illinois, Urbana-Champaign

NSF Graduate Research Fellowship Program

Honorable Mention, 2020 Spring USRESP

2020

Vassar College

Undergraduate Statistics Research Project Competition.

Sigma Xi

2020

Vassar College

For research achievement and potential.

Departmental Honors

2020

Vassar College

Computer Science, Mathematics.

PUBLICATIONS

Boughoula, Assma, Kevin Ros, and ChengXiang Zhai. “An Optimization Approach to Automatic Construction of Browsable Concept Index for Organizing Online Educational Content.” In 2022 IEEE International Conference on Knowledge Graph (ICKG). IEEE, 2022.

Ros, Kevin, Maxwell Jong, Chak Ho Chan, and ChengXiang Zhai. “Generation of Student Questions for Inquiry-based Learning.” In 15th International Natural Language Generation conference (INLG 2022). Association for Computational Linguistics, 2022.

Edwards, Carl, Tuan Lai, Kevin Ros, Garrett Honke, and Heng Ji. “Translation between Molecules and Natural Language.” arXiv preprint arXiv:2204.11817 (2022).

Ros, Kevin, Carl Edwards, Heng Ji, and ChengXiang Zhai. "Team Skeletor at Touche 2021: Argument Retrieval and Visualization for Controversial Questions." In CLEF (Working Notes), pp. 2441-2454. 2021.

Naumov, Pavel, and Kevin Ros. "Strategic coalitions in stochastic games." *Journal of Logic and Computation* 31, no. 7 (2021): 1845-1867.

Naumov, Pavel, and Kevin Ros. "Comprehension and knowledge." In *Proceedings of the AAAI Conference on Artificial Intelligence*, vol. 35, no. 13, pp. 11622-11629. 2021.

Ros, Kevin, Henrik Olsson, and Jingchen Hu. "Two-Phase Data Synthesis for Income: An Application to the NHIS." In *Privacy in Statistical Databases*. 2020.

Naumov, Pavel, and Kevin Ros. "Strategic coalitions in systems with catastrophic failures." In *Sixteenth International Conference on Principles of Knowledge Representation and Reasoning*. 2018.

WORK EXPERIENCE

Research Scientist Intern June 2022 - August 2022
ZettaBlock (startup) San Francisco, CA

Researched cutting-edge technologies (IPFS, Zero-knowledge Proofs) and their anticipated effects on the core business model. Trained and deployed a text-to-SQL model as a microservice using Flask, Docker, Python, PyTorch Lightning, and Hugging Face. Helped draft, write, and edit whitepaper.

AI Software Developer Intern May 2021 - August 2021
Trova AI, Inc. (startup) Urbana, IL

Researched, developed, and implemented several information retrieval techniques for user-focused personal search with emphasis on latency and scalability. Explored techniques to re-rank and present personalized heterogeneous results (e.g., email, Slack, Jira). Architected a microservice search framework which leveraged a mix of external APIs and internal Elasticsearch.

RESEARCH EXPERIENCE

Research Assistant August 2020 - Present
Advisor: Dr. ChengXiang Zhai, University of Illinois, Urbana-Champaign Urbana, IL

Anticipating information needs without explicit queries.

Undergraduate Thesis September 2019 - May 2020
Advisor: Dr. Nancy Ide, Vassar College Poughkeepsie, NY

Topic: Using word embeddings from PubMed abstracts and literature-based discovery techniques to discover non-explicit relationships between mental illnesses and symptoms.

Undergraduate Research Assistant January 2019 - August 2020
Vassar College Poughkeepsie, NY

Worked with Dr. Nancy Ide and Keith Suderman to improve the document retrieval and ranking system for The Language Application Grid Question/Answer Service.

Independent Study September 2017 - Present
Vassar College Poughkeepsie, NY

Conducted research with Dr. Pavel Naumov to study soundness and completeness properties of multi-agent axiomatic systems with a probabilistic aspect.

REU Summer Research Program*Vassar College, funded by NSF*

May 2019 - September 2019

Poughkeepsie, NY

Worked with Dr. Nancy Ide and Keith Suderman to optimize The Language Application (LAPPS) Grid Question/Answer service with RabbitMQ and Docker.

Independent Study*Vassar College*

September 2018 - December 2018

Poughkeepsie, NY

Conducted research for Dr. Nancy Ide to extract information and trends from published geology research articles, specifically focusing on the relationships between mineral level and epochs.

TEACHING EXPERIENCE

TA, Text Information Systems*University of Illinois, Urbana-Champaign*

August 2022 - December 2022

Urbana, IL

Managed the infrastructure for the course project submissions for over 400 students. Oversaw and guided students through the final course project process. Also designed, built, and implemented the Community Digital Library (see the “Projects” section below).

TA, Advanced Information Retrieval*University of Illinois, Urbana-Champaign*

January 2022 - May 2022

Urbana, IL

Primarily responsible for organizing and monitoring of the course projects for 100 students. Helped students work through various topics in information retrieval.

TA, Text Information Systems*University of Illinois, Urbana-Champaign*

August 2021 - December 2021

Urbana, IL

Managed the infrastructure for assignment and course project submissions for over 400 students. Oversaw and guided students through the final course project process.

TA, Introduction to Data Science*Vassar College (Liberal Arts Collaborative for Digital Innovation)*

May 2019 - August 2019

Poughkeepsie, NY

Guided students through the foundations of data science while working closely with professors and other TAs to ensure that no student fell behind. Also aided in course material development, evaluation, and deployment.

PROJECTS

The Community Digital Library

Responsible for building and maintaining an online platform for users to create communities, share webpages to the communities, and search the content saved within communities. The platform consists of a website (built using React, HTML/CSS, JavaScript, and Next.js), a Chrome extension (built using HTML and CSS), and a server backend (built using Python, Flask, communicates with MongoDB and AWS Opensearch). The platform has been used by over 500 students in multiple courses (CS410, CS510) at the University of Illinois. Lead the developer team (multiple undergraduate and graduate students) to deliver features critical to course functionality in a timely manner.

EXTRACURRICULAR ACTIVITIES

Conference Reviewer

EMNLP, 2022 (Language Generation Track)

Illinois Women’s Varsity Volleyball Team

September 2022 -Present

Student Manager

Illinois Men's Club Volleyball Team

September 2020 -Present

President, 2023-2024

Team Captain (with Rocky Mayer), 2022 - 2023

USAV National Champions, 2021

Vassar Men's Volleyball Team

September 2016 - May 2020

AVCA All-American, 2020

Team Captain, 2018 - 2020