

# KEVIN ROS

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## EDUCATION

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**University of Illinois, Urbana-Champaign** (GPA: 3.97) *September 2020 - Present*  
Ph.D. Candidate in Computer Science

**Vassar College** (GPA: 3.83) *September 2016 - May 2020*  
B.A. in Computer Science  
B.A. in Mathematics

## ACADEMIC AWARDS

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**Cozad New Venture Challenge Awards** 2025  
*University of Illinois, Urbana-Champaign*

Awarded \$1,250 for best practice pitch and best demo day pitch, as well as \$5,000 from the Grainger Foundation Prize.

**NSF National I-Corps Program Grant** 2024  
*National Science Foundation*

Awarded \$50,000 for studying the commercialization of research.

**Honorable Mention, SIGIR Best Short Paper** 2024  
*Washington D.C., USA*

Awarded for TextData: Save What You Know and Find What You Don't.

**SIGIR Student Travel Grant** 2023  
*Taipei, Taiwan*

Covered the cost of travel and registration for SIGIR: The 46th International ACM SIGIR Conference on Research and Development in Information Retrieval.

**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

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Kevin Ros, Rahul Suresh, and ChengXiang Zhai. 2025. “Instinfo: A Just-in-Time Literature Recommendation System for Presentations.” In the Proceedings of the 48th International ACM SIGIR Conference on Research and Development in Information Retrieval, July 13-18, 2024, Pauda Italy. ACM, New York, NY, USA, 4 pages.

Pavel Naumov and Kevin Ros. 2025. “Comprehension and Knowledge” In the Proceedings of the Journal of Logic, Language and Information. To appear.

Kevin Ros, Kedar Takwane, Ashwin Patil, Rakshana Jayaprakash, and ChengXiang Zhai. 2024. “Text-Data: Save What You Know and Find What You Don’t” In the Proceedings of the 47th International ACM SIGIR Conference on Research and Development in Information Retrieval, July 14-18, 2024, Washington D.C, USA. ACM, New York, NY, USA, 4 pages.

Kevin Ros and ChengXiang Zhai. 2024. “Scaling Collaborative Learning: Using the Community Digital Library to Enrich Course Content.” In Special Interest Group on Computer Science Education (SIGCSE 24), March 20-23, 2024, Portland, OR, USA. ACM, New York, NY, USA, 4 pages.

Kevin Ros and ChengXiang Zhai. 2023. “The CDL: An Online Platform for Creating Community-based Digital Libraries.” In Computer Supported Cooperative Work and Social Computing (CSCW 23 Companion), October 14-18, 2023, Minneapolis, MN, USA. ACM, New York, NY, USA, 4 pages.

Kevin Ros, Matthew Jin, Jacob Levine, and ChengXiang Zhai. 2023. “Retrieving Webpages Using Online Discussions.” In Proceedings of the 2023 ACM SIGIR International Conference on the Theory of Information Retrieval (ICTIR 23), July 23, 2023, Taipei, Taiwan. ACM, New York, NY, USA, 10 pages.

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

Kevin Ros, 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.

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

Kevin Ros, 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.

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

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

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

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

## WORK EXPERIENCE

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### AI Consultant

March 2025 - Present

*Kite AI*

*Remote*

Researched and wrote blog posts on state-of-the-art machine learning methods and models. Also aided in drafting and refining whitepapers.

### Research Scientist Extern

May 2023 - August 2023

*IBM*

*Yorktown Heights, NY*

Researched and tested various methods for proactively retrieving prior change requests given a new change request for the purpose of risk assessment. Leveraged contrastive learning and transformer encoders to proactively retrieve missing change request fields for assessing request similarity.

### 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 the 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

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### 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**

*Vassar College*

September 2017 - Present

*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**

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### **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**

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### **Instinfo**

Led a team for the NSF National I-Corps program during the Fall of 2024 by interviewing over 100 stakeholders in the customer ecosystem relating to the use cases for just-in-time information retrieval. Aggregated feedback and pivoted from TextData to building Instinfo, a speech-based just-in-time retrieval system. Instinfo uses state-of-the-art machine learning to provide real-time transcription and recommendation to participants of learning-based presentations.

## **TextData**

Responsible for building and maintaining an online platform for users to ask and answer questions while viewing online content. 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 1000 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**

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### **Conference Reviewer**

SIGIR, 2025

EMNLP, 2023

EMNLP, 2022

### **Illinois Women's Varsity Volleyball Team**

September 2022 -Present

Graduate Student Manager

### **Illinois Men's Club Volleyball Team**

September 2020 -Present

President, 2023 - 2024

National All-Tournament Team, 2021, 2023, 2024

Team Captain (with Rocky Mayer), 2022 - 2023

NVCF National Champion runner-up, 2023

USAV National Champions, 2021

### **Vassar Men's Varsity Volleyball Team**

September 2016 - May 2020

AVCA All-American, 2020

Betty Richey Performer of the Year, 2020

CoSIDA Academic All-District First Team - Men's At-Large, 2020

Team Captain, 2018 - 2020