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YOSHEE JAIN

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RESEARCH OBJECTIVE

In my research, I design human-centered systems that can integrate computing as a tool in real-world applications. I aim to create educational technology tools that enable all students to engage with computing in ways relevant to their learning objectives and meaningful for their future goals, using methods from human-computer interaction and machine learning.

EDUCATION

University of Illinois Urbana-Champaign Champaign-Urbana, IL

- Bachelor of Science in Computer Science, Minor in Statistics **May 2026**
- **Thesis**: Towards Identifying Domain-Specific Programming Plans at Scale: Needs, Challenges, and Solutions **GPA: 4.0/4.0**
- **Research Advisors:** Dr. Katie Cunningham, Dr. Eshwar Chandrasekharan, Dr. Koustuv Saha

HONORS AND AWARDS

- **Summer Travel Award** 2025
  Selected for the CHP Summer Travel Award ($1,000), facilitating international research collaboration under faculty mentorship.
- **Jeffrey P. Blahut Memorial Scholarship** 2025
  One of two recipients of the Jeffrey P. Blahut Memorial Scholarship ($4,000), awarded for academic excellence in Computer Science.
- **Harold and Ruth Hayward/Tau Beta Pi Award Fund** 2025
  Recipient of the Harold and Ruth Hayward Scholarship ($3,000), awarded for excellence, leadership, and service in engineering.
- **Conference Travel Grants** 2025
  Awarded the Conference Travel Grants from OUR ($400) and CHP ($400) to support presentation of research at CHI 2025 in Japan.
- **Dean's List** 2025
  Dean's List honoree for six consecutive semesters (FA22–SP25), awarded to the top 20% of students in the College of Engineering.
- **Summer Research Award** 2024
  Awarded the CHP Summer Research Fellowship ($2,000) for independent, faculty-guided research at UIUC.
- **Distinguished Undergraduate Researcher Certificate** 2024
  Earned the Distinguished Undergraduate Research Certificate for exceptional commitment to research, communication, and scholarly contribution at UIUC.
- **Illinois Engineering Achievement Scholarship** 2024
  Recipient of the scholarship for $8,000 (2024-25) and $1,000 (2023-24) for demonstrated academic excellence.
- **Illinois Engineering Outstanding Scholarship** 2024
  Honored with the scholarship ($2,000 annually, 2023–25) for exemplary academic performance in engineering.
- **Distinguished Active Member, Tau Beta Pi (The Engineering Honor Society)** 2024
  Recognized as a Distinguished Active Member for sustained engagement, leadership, and service to the Illinois Alpha chapter.
- **Chancellor's Scholar** 2023
  Admitted to the Campus Honors Program (~550 students) for academic excellence and interdisciplinary engagement.
- **Edmund J. James Scholar** 2023
  Designated James Scholar in the Grainger College of Engineering for academic excellence, curricular engagement, and leadership.

PUBLICATIONS

Under Review

* Indicates Equal Contribution.

[J.3] Linguistic Comparison of AI- and Human-Written Responses to Online Mental Health Queries.
*K. Saha, **Y. Jain**, M. De Choudhury.*
Submitted April 2025.

[C.3] Uncovering the Internet's Hidden Values: An Empirical Study of Desirable Behavior Using Highly-Upvoted Content on Reddit.
*A. Goyal, C. Lambert, **Y. Jain**, E. Chandrasekharan.*
Submitted Jan 2025.

Heavily Peer-Reviewed Conference Proceedings

[C.2] PLAID: Supporting Computing Instructors to Identify Domain-Specific Programming Plans at Scale.
Y. Jain, M. Demirtas*, K. Cunningham.*
2025 ACM CHI Conference on Human Factors in Computing Systems (CHI 2025).

[C.1] Exploring the Potential of Large Language Models for Estimating the Reading Comprehension Question Difficulty.
***Y. Jain**, John Hollander, Amber He, Sunny Tang, Liang Zhang, John Sabatini.*
2025 International Conference on Human-Computer Interaction (HCII 2025).

Journal Articles

[J.2] Online Communities as a Support System for Alzheimer's and Dementia Care: Large-scale Exploratory Study.
*S. Kaliappan, C. Liu, **Y. Jain**, R. Karkar, K. Saha.*
JMIR Aging 2025.

[J.1] AI vs Humans for Online Support: Comparing the Language of Responses from LLMs and Online Communities of Alzheimer's Disease.
*K. Saha, **Y. Jain**, C. Liu, S. Kaliappan, R. Karkar.*
ACM Transactions on Computing for Healthcare 2025.

Posters

[P.3] Examining the Efficacy of Hashtag-Based Bans on Instagram.
E. Mok, **Y. Jain***, S. Gottiparthi*, E. Chandrasekharan.*
2025 ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW 2025).

[P.2] Investigating How Gilds Were Employed On Reddit.
*C. Lambert, **Y. Jain**, K. Saha, E. Chandrasekharan.*
2024 ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW 2024).

[P.1] Towards Methods for Identifying High-Quality Domain-Specific Programming Patterns.
***Y. Jain**, K. Cunningham.*
2023 ACM Conference on International Computing Education Research V.2 (ICER 2023).

Symposiums & Lightly-Peer Reviewed Conferences

[S.2] Exploring the Use of LLMs to Generate Contextualized Worked Examples From Programming Patterns.
***Y. Jain**, K. Cunningham.*
TAPIA Conference 2025.

[S.1] PLAID: Supporting Computing Instructors to Identify Domain-Specific Programming Plans at Scale.
***Y. Jain**, M. Demirtas, K. Cunningham.*
Symposium on AI, Education, and the Learning Sciences.

Theses

[T.1] Towards Identifying Domain-Specific Programming Plans at Scale: Needs, Challenges, and Solutions
Y. Jain
Bachelor's Thesis.

RESEARCH EXPERIENCE

- **Undergraduate Summer Research Intern** Jun 2025 – Present
  School of Computing, Korea Advanced Institute of Science and Technology *Daejeon, South Korea*
  - **Advisor(s):** Dr. Juho Kim, Dr. Seungju Kim, Saelyne Yang
  - **Project(s):** Designing a Personalized Video Learning Interface for Adults with Borderline Intellectual Functioning.

- **Undergraduate Summer Research Assistant** May 2025 – Present
  Institute for Intelligent Interactive Systems, Federal Institute of Technology Zurich (ETH Zürich) *Remote*
  - **Advisor(s):** Dr. April Yi Wang, Dr. Katie Cunningham
  - **Project(s):** Developing a tool that pairs student explanations with their mental simulations to reduce LLM misinterpretations of problem decompositions and enhance feedback accuracy.

- **Undergraduate Research Assistant [P.3, P.2, C.3]** Aug 2023 – Present
  Siebel School of Computing and Data Science, University of Illinois Urbana-Champaign *Urbana, IL*
  - **Advisor(s):** Dr. Eshwar Chandrasekharan, Charlotte Lambert
  - **Project(s):** Evaluated Instagram's moderation approach and built a classifier that outperformed it by reducing wrongful penalization; Designed a quasi-experimental study on Reddit to assess how positive feedback (e.g., upvotes) affects user longitudinal behavior.

- **CS Student Ambassador/Research Scholar [S.2, S.1, T.1]** Jan 2023 – Present
  Siebel School of Computing and Data Science, University of Illinois Urbana-Champaign *Urbana, IL*

– **Advisor(s):** Dr. Katie Cunningham
– **Project(s):** Investigated ChatGPT's ability to generate contextualized worked examples from programming patterns.

- **Undergraduate Research Assistant [J.3, J.2, J.1]** Aug 2023 – May 2025
  Siebel School of Computing and Data Science, University of Illinois Urbana-Champaign *Urbana, IL*
  – **Advisor(s):** Dr. Koustuv Saha
  – **Project(s):** Analyzed LLM responses in Alzheimer's support forums, integrating inductive coding and large-scale psycholinguistic and lexico-semantic comparison with human-authored posts.

- **Undergraduate Research Intern [C.1]** May 2024 – Aug 2024
  Human-Computer Interaction Institute, Carnegie Mellon University *Remote*
  – **Advisor(s):** Dr. Jionghao Lin, Dr. John Sabatini, Dr. John Hollander, Liang Zhang
  – **Project(s):** Benchmarked LLMs' ability to estimate question difficulty in reading comprehension against human-annotated references; Built a multi-agent, RAG-based, tutor-learner simulation that adjusted question difficulty in response to learner performance.

- **CS Summer Research Program Intern [C.2]** May 2024 – Aug 2024
  Siebel School of Computing and Data Science, University of Illinois Urbana-Champaign *Urbana, IL*
  – **Advisor(s):** Dr. Katie Cunningham
  – **Project(s):** Designed PLAID: a system that integrates the adaptability of LLMs with educators' pedagogical expertise to enable scalable and effective programming pattern authoring.

- **Undergraduate Summer Research Intern [P.1]** May 2023 – Aug 2023
  Siebel School of Computing and Data Science, University of Illinois Urbana-Champaign *Remote*
  – **Advisor(s):** Dr. Katie Cunningham
  – **Project(s):** Conducted a formative study to examine current strategies and challenges in programming pattern identification to inform system design.

SKILLS

Languages: Python, C/C++, Java, LaTeX, R, HTML/CSS, JavaScript, Flask, Django * Taken at UIUC.
Frameworks: Cursor, Visual Studio Code, Git/GitHub, Android Studio, PyCharm, REST APIs, Multimodal LLMs
Research Methods: System Design, Mixed Methods Analysis, Semi-structured Interviews, Quasi-Experimental Studies, and Causal Inference Analysis
Relevant Courses*: Methodological Pluralism (Insight into HCI Methodologies), Computer Science Education Research, Computational Social Science, Statistics and Probability, Statistical Programming (R), Database Systems, Text Mining, User Interface Design, Advanced Data Analysis, Algorithms and Models of Computation, Applied Machine Learning

TEACHING EXPERIENCE

CS 101: Intro Computing: Engrg & Sci. University of Illinois Urbana-Champaign
Course Assistant *Fall 2025*

CS 102: Little Bits to Big Ideas. University of Illinois Urbana-Champaign
Course Assistant *Spring 2025*

CS 124 Honors: Introduction to Computer Science I. University of Illinois Urbana-Champaign
Project Manager *Spring 2023*

Girls Who Code University of Illinois Urbana-Champaign
Undergraduate Mentor *Fall 2022 & Spring 2023*

SERVICE

Siebel School of Computing and Data Science. University of Illinois Urbana-Champaign Urbana, IL
Student Ambassadors/Research Scholars *Jan. 2023 - May. 2025*

Reflections Projections 2024. Association of Computing Machinery. University of Illinois Urbana-Champaign Urbana, IL
Content Team Co-Director *Feb. 2023 - Oct 2024*

Tau Beta Pi. University of Illinois Urbana-Champaign Urbana, IL
Distinguished Active Member *Feb. 2024 - Present*

LANGUAGES

English (proficient), Hindi (proficient), German (intermediate reading and writing)