

Yijun Liu

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Research Interest

Human-computer interaction; human-AI collaboration; AI writing support; visualization

Education

- 2024 - Present **University of Illinois Urbana-Champaign**, Urbana, IL
Ph.D. Student in Computer Science
Advisor: Tal August
- 2020 - 2024 **Emory University**, Atlanta, GA
B.S. in Computer Science (honors); B.S. in Quantitative Sciences in Sociology
Honor Thesis Advisor: Chinmay Kulkarni

Selected Publication

- [1] **From Crafting Text to Crafting Thought: Grounding Intelligent Writing Support to Writing Center Pedagogy**
Yijun Liu and Tal August
In2Writing Workshop at NAACL 2025 **Best Paper Award**
Full Paper Under Review
- [2] **Unmasking Dunning-Kruger Effect in Visual Reasoning and Visual Data Analysis**
Mengyu Chen, Yijun Liu, and Emily Wall
2024 IEEE Visualization Conference (VIS'24)
- [3] **Needling Through the Threads: A Visualization Tool for Navigating Threaded Online Discussions**
Yijun Liu, Frederick Choi, and Eshwar Chandrasekharan
Under Review
- [4] **Predicting Atrial Fibrillation Ablation Outcomes: A Machine Learning Approach Leveraging a Large Administrative Claims Database**
Yijun Liu, Mustapha Oloko-Oba, Kathryn Wood, Michael S. Lloyd, Joyce C. Ho, Vicki Stover Hertzberg
Under Review

Award & Recognition

- 2025 In2Writing Best Paper Award
- 2024 Emory Outstanding CS Student of the Year
Phi Beta Kappa
- 2023 Google CS Research Mentorship Recipient
- 2022 SIGKDD Student Travel Award (\$800)
CRA-WP Student Travel Award (\$2,000)
Emory Quantitative Science Distinction Award
ASA DataFest @ Emory Best Insight Award
- 2021 ASA Fall Data Challenge Best Undergraduate Overall Award 2025

Research Experience

Designing Non-Directive AI Writing Feedback

Advisor: Tal August

- Led design and development of *Writor*, an AI writing-feedback tool informed by tutor interviews.
- Conducted mixed-method expert evaluation (survey + interview) to assess pedagogical alignment and feedback quality, revealing strong preference from AI-skeptical educators for non-directive feedback.

Visualizing Threaded Activity in Online Discussion for Moderators

Advisor: Eshwar Chandrasekharan

- Led design and development of *Needle*, an interactive visualization system using Next.js/D3.js to summarize Reddit threads by activity, toxicity, and engagement.
- Conducted qualitative user study with 10 Reddit moderators (interview) to assess usability and impact of *Needle* on moderation workflow.

Enhancing Collaborative Web App Inclusivity via LLMs

Advisor: Chinmay Kulkarni

- Designed an iterative process for code generation, validation, and merging, enabling LLM to deliver complete and valid code solutions.
- Generated functioning React pages using existing code enhanced with inclusivity features.

Predicting Atrial Fibrillation Ablation Success with ML

Advisors: Vicki Hertzberg & Joyce Ho

- Generated refined datasets from 100GB+ healthcare data in SAS, applying time-series transformation and normalization to gather patients' medical histories.
- Led development of ML models, including logistic regression, SVMs, decision trees, random forests, GBDTs, and neural networks; employed k-fold, Monte Carlo cross-validation, grid search, and various feature selection techniques (filter, wrapper & embedded) alongside with PCA.
- Advanced performance by developing specialized subgroup models surpassing existing benchmarks.

Teaching Experience

2025 FA	CS 465: User Interface Design , Teaching Assistant, UIUC
2022 FA	CS 253: Data Structure and Algorithms , Teaching Assistant, Emory
2021 FA & SP	Emory Oxford Writing Center , Lead Writing Consultant

Academic Service

Web Developer

2024	<u>AAAI Workshop: LLMs4Bio</u>
2022	<u>SIGKDD</u>

Student Volunteer

2022	SIGKDD
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Skill

Programming Languages	Front-End (HTML, CSS/S, TypeScript, React.js), Back-End (Flask, Node.js), Database (MySQL, PostgreSQL, MongoDB), Cloud Services (AWS, GCP, Heroku), Machine Learning (scikit-learn, PyTorch, TensorFlow, Keras), Statistical Analysis (NumPy, Pandas, SciPy, R, SAS), Visualization (Matplotlib, D3.js), and Prompt Engineering
Design	Figma, Adobe Photoshop/InDesign/Illustrator
Research Methods	Interviews, Survey Design, Usability Testing, Experimental Design, Hypothesis Testing, Thematic Analysis