Andrew Kuznetsov, NRP

Resume

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Human Computer Interaction Institute, Carnegie Mellon University, 5000 Forbes Avenue Pittsburgh, PA.
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Research Interests

Collaboration {Systems, Interactions, Evaluation}, **Sensemaking** {Knowledge Capture, Synthesis, Reuse}, **Human-Computer Interaction & Organizational Behavior Theory** {Technical Systems, Mixed Methods, User/Team Studies}

Ongoing Research

My PhD work investigates how humans use information when performing complex tasks, such as conducting multi-step searches or implementing a care plan. This involves two synergistic parts: (1) new systems to help people save and use task-related 'provenance' information, (2) new methods for collecting human task data at scale, which can then be used for modeling complex tasks.

- **Care Coordination Modeling and AI Evaluation** - Multi-agent AI systems, LLM finetuning, simulation & team studies.
- **Cognitive Scaffolding** - AI-Support interfaces for everyday diagnosis and troubleshooting tasks.
- **Data Provenance Tools for Multi-Agent Systems** - 'Chains of provenance' for generative AI data collections.

Education

2018–Present	Ph.D. Human-Computer Interaction	School of Computer Science, Carnegie Mellon University *Mentors: Aniket Kittur (HCII), Anita Woolley (Tepper; OBT)*
2023	NRP Nationally Registered Paramedic	Center for Emergency Medicine, University of Pittsburgh
2014	B.S. Computer Science	University of Illinois Urbana-Champaign *Mentors: Aditya Parameswaran, Brian Bailey*

Professional Experience

June 2024 – August 2024	**Research Scientist Intern**, Google Research. Collection and modeling of human visual attention data on complex tasks.
May 2023 – August 2023	**Research Scientist Intern**, HCI & Visualization Lab, Autodesk Research. Exploring interfaces and techniques for reviewing generative AI outputs. Ongoing collaboration.
Sept 2023 – Current	**Search Planner**, Appalachian Search Rescue Conference (ASRC) Remote Support Corps Developing and adapting technology to plan and support searches of lost persons within mountainous terrain using geospatial and coordination platforms. Ongoing.
May 2022 – Current	**Research Lead**, Robust Teaming Group, Carnegie Mellon University. The "Robust Teaming Project" project explores the creation of a human-centered AI system that can assist a caregiving network in learning a person's needs, preferences, and adapting as those change over time. I lead the development of AI agents, simulations, experiments, evaluations, user studies, and interviews for supporting caregiver coordination and task delegation within home healthcare networks, as well as our collaboration at the University of Pittsburgh for field testing our AI systems. Ongoing.
May 2020 – Sept 2020	**Research Scientist Intern**, Product Design and Strategy Team, Wikimedia Foundation. Explored how Wikipedia readers trust article content and the design of trust-related platform safety interventions. Results published in Proceedings of ACM CHI 2022.
Aug 2018 – Current	**Emergency Medical Technician**, Foxwall EMS, CMU EMS. >1,500 clinical and field hours as a medical professional trained in basic life support (BLS) and advanced life support (ALS).

Professional Experience (Continued)

May 2016 – Aug 2016 **Software Engineering Intern**, Core Infrastructure Team, Amazon Mechanical Turk.
Prototyped 'Human In The Loop' workflows/chains at Amazon MTurk, our effort later grew into two products within Amazon; AWS SageMaker Ground Truth and Augmented AI (A2I).

May 2014 – Aug 2014 **Startup Accelerator Intern**, Hackstar Intern Team, Techstars Chicago.
Assisted the engineering teams of startups in the Techstars Chicago class of 2014 in backend development projects in preparation for investor demos and presentations.

Programming Languages

Prototyping {Python, Javascript/React, HTML/CSS, Unity}, **Backend Development** {Python, Java, C++, C#}, **Analytics** {iPython/Pandas, R, SQL}, **Deep Learning Frameworks** {PyTorch}

Awards and Honors

2024 Center for Machine Learning and Health (CMLH) Digital Health Innovation Fellowship
2023 Pittsburgh Emergency Medicine Foundation (PEMF) Paramedic Education Scholarship
2018 Social Alpha Foundation Impact Summit Blockchain for Social Good Grant
2017 Office of Undergraduate Research (OUR) Research Support Grant (RSG)
2017 Illinois Scholars Undergraduate Research (ISUR) Scholar Grant
2015 Illinois Scholars Undergraduate Research (ISUR) Scholar Grant
2015 University of Illinois Engineering Visionary Scholarship

Academic Reviewing

ACM CI	2024
ACM IMWUT	2024
ACM CHI LBW	2024 (AC)
ACM CHI	2021, 2022, 2023, 2024, 2025
ACM UIST	2022
ACM CSCW	2022, 2023, 2024
ACM DIS	2023, 2024

Publications

18. **Kuznetsov, A.**, Matejka, J., Aseniero, B. (2024). Wikis and Warnings: Grounding Generative Outputs with Multi-Level Sensemaking Support. [In Preparation].

17. Dishop, C. R., Brown, A. S., **Kuznetsov, A.**, Chao, P., Woolley, A. W. (2024). Cooling the warmth of received help: Effects of delegating to an artificial intelligence tool on felt obligations and reciprocity. [In Review].

16. [Authors anonymized for review]. (2024). Association of a Simplified RPM Triage Score with Mortality May Indicate an Opportunity for Easier but Still Valid Rapid Triage of Injured Patients [In Review at NAEMSP 2025].

15. [Authors anonymized for review]. (2024). Is the RPM Trauma Triage Score Valid in Predicting Mortality in Prehospital Patients with Non-traumatic Medical Illness? [In Review at NAEMSP 2025].

14. [Authors anonymized for review]. (2024). Validating the Use of the RPM Score for Triage of Injured Patients in a Current Trauma Population. [In Review at NAEMSP 2025].

13. **Kuznetsov, A.**, Chao, P., Dishop, C. R., Brown, A. S., Woolley, A. W. (2024, November). Transactive Memory in Caregiver Networks Using Artificial Intelligence. Artificial Intelligence for Aging in Place. (AAAI FSS '24)

12. **Kuznetsov, A.**, Culvey, E. V., Dalton, S., Koshy, G., Fernandez, A. R., Kupas, D. F. (2024, September). Association of a Simplified RPM Triage Score with Mortality May Indicate an Opportunity for Easier but Still Valid Rapid Triage of Injured Patients. In The 2024 International Scientific Symposium, Prehospital Care Research Forum (ISS/PCRF '24).

11. Koshy, G., **Kuznetsov, A.** Culvey, E. V., Dalton, S., Fernandez, A. R., Kupas, D. F. (2024, September). Is the RPM Trauma Triage Score Valid in Predicting Mortality in Prehospital Patients with Non-traumatic Medical Illness? In The 2024 International Scientific Symposium, Prehospital Care Research Forum (ISS/PCRF '24).

10. Culvey, E. V., **Kuznetsov, A.**, Koshy, G., Dalton, S., Fernandez, A. R., Kupas, D. F. (2024, September). Validating the Use of the RPM Score for Triage of Injured Patients in a Current Trauma Population. In The 2024 International Scientific Symposium, Prehospital Care Research Forum (ISS/PCRF '24).

9. **Kuznetsov, A.**, Liu, M., Kittur, A. (2024). Tasks, Time, and Tools: Quantifying Online Sensemaking Through a Survey-based Study. Preprint arXiv:2411.07206.

8. **Kuznetsov, A.**, Chao, P., Dishop, C. R., Brown, A. S., Woolley, A. W. (2024, June). The Collaborative Caring Virtual Testbed: A software platform for prototyping collective intelligence interventions for asynchronous care-teams. ACM Collective Intelligence. (CI '24)

7. Brown, A. S., Dishop, C. R., **Kuznetsov, A.**, Chao, P., Woolley, A. W. (2024, June). Beyond efficiency: Commitment issues: Feedback, commitment, and performance in algorithmically managed contexts. ACM Collective Intelligence. (CI '24)

6. **Kuznetsov, A.**, Chang, J., Hahn, N., Rachatasumrit, N., Breneisen, B., Coupland, J, Kittur, A. (2022, October). Fuse: In-Situ sensemaking Support in the Browser. In The 35th Annual ACM Symposium on User Interface Software and Technology (UIST '22).

5. Liu, M., **Kuznetsov, A.**, Kim, Y., Chang, J., Kittur, A., Myers, B. Brad A. (2022, October). Wigglite: Low-cost Information Collection and Triage. In The 35th Annual ACM Symposium on User Interface Software and Technology (UIST '22).

4. **Kuznetsov, A.**, Novotny, M., Klein, J., Saez-Trumper, D., Kittur, A., (2022, April). Templates and Trust-o-meters: Towards a widely deployable indicator of trust in Wikipedia. In Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems.

3. Reinhart, A., Brooks, L., Jahja, M., Rumack, A., Tang, J., Agrawal, S., ... **Kuznetsov, A.**, ... , Tibshirani, R. J. (2021). An open repository of real-time COVID-19 indicators. Proceedings of the National Academy of Sciences, 118(51).

2. Hastings, E. M., Alamri, A., **Kuznetsov, A.**, Pisarczyk, C., Karahalios, K., Marinov, D., Bailey, B. P. (2020, April). LIFT: Integrating Stakeholder Voices into Algorithmic Team Formation. In Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (pp. 1-13).

1. Jain, A., Seo, J. Y., Goel, K., **Kuznetsov, A.**, Parameswaran, A., Sundaram, H. (2016). It's just a matter of perspective (s): Crowd-Powered Consensus Organization of Corpora. Preprint arXiv:1601.02034.

Presentations

4. (Oral Presentation; 1% of submissions) Culvey, E. V., **Kuznetsov, A.**, Koshy, G., Dalton, S., Fernandez, A. R., Kupas, D. F. (2024, September). Is Your Trauma Triage Accurate? In The 2024 World Trauma Symposium (WTS '24).

3. Brown, A. S., Dishop, C. R., **Kuznetsov, A.**, Chao, P., Woolley, A. W. (2023, September). Beyond efficiency: Commitment issues: Feedback, commitment, and performance in algorithmically managed contexts. Academy of Management Annual Meeting, "Humans + AI: Organizational behavior research on human-machine interactions." (Symposium).

2. **Kuznetsov, A.**, Chao, P., Dishop, C. R., Brown, A. S., Woolley, A. W. (2023, September). Scaffolding Trust and Context in Asynchronous Collaboration. Trust: Social Bridge Between Humans and Technology. Virtual.

1. Brown, A. S., Dishop, C. R., **Kuznetsov, A.**, Chao, P., Woolley, A. W. (2023, September). Beyond efficiency: Trust, AI, and surprise in knowledge work environments. Trust: Social Bridge Between Humans and Technology. Virtual.

Select Non-Academic Projects

Outside of full-stack web development, I maintain a wide range of prototyping experiences, including mobile development, AR/VR , hardware and IoT devices, as well as some more esoteric stuff like Solidity (Ethereum). More projects and details can be found on andrewkuz.net.

• **Left 4 Virtual Reality** (2015) - Re-purposing Consumer Toys as VR Input Devices
Nerf toy // Wii controller // Microsoft Kinect // Hardware flex sensors // Particle, Arduino micro-controller board.

• **StreamPoint** (2016) - Prototype Presentation Software to Generate Real-time Slides During Presentation
Presentation web app // Bing API // iOS Mobile application // NLP // Voice-to-Text.

• **Search3** (2018) - Prototype Data Network for Search and Rescue Robotics
Ethereum smart contract // Computer vision embeddings // Camera-equipped drone // iOS mobile application.

• **PhD Positions Dashboard** (2023) - Deployed Multi-Agent System for Collecting CS/HCI PhD Openings, ∼15k yearly users.
Multi-agent LLM orchestration // Google sheets API // Image-to-text