Carter Buckner
cb051@uark.edu | www.cb051.github.io

Research Interests

AI Interpretability, Trustworthy AI, AI Ethics, Privacy-Preserving AI, User-Centered Privacy, Privacy Policy

Education

Ph.D. Computer Science | Focus: User-Centered Privacy and AI   Aug 2022 – *present*
University of Arkansas, Fayetteville (UARK)
B.S. Computer Science | Minor Music   Dec 2021
University of Arkansas, Fayetteville (UARK)

Awards and Fellowships

NSF LSAMP Bridge to Doctorate Fellowship   Aug 2022

This is a two-year NSF funded fellowship presented to twelve incoming doctoral students at ~12 member schools across the US.

P.K. Kuroda Endowed Graduate Fellowship   Aug 2024

This is a one-year fellowship awarded towards completion of a doctoral program in the university's College of Engineering. It is provided based on incoming test qualifications and in partial fulfillment of the Bridge to Doctorate fellowship

W. R. Thomas Endowed Doctoral Fellowship   Aug 2025

This is a one-year fellowship awarded towards completion of a doctoral program in the university's College of Engineering. It is provided based on incoming test qualifications and in partial fulfillment of the Bridge to Doctorate fellowship

Research Experience

Security and Privacy Lab   Jan 2022 – *present*

PhD Student, Qinghua Li, *Advisor*

1. Working to develop policy recommendations on the use of big data and AI in critical sectors for the state of Arkansas. This project considers privacy values specific to rural communities not currently expressed in privacy mechanisms or data privacy laws. This is a collaborative project among six members with the UARK Public Policy department.
2. Exploring solutions to balance privacy and transparency in trustworthy AI systems. Current work explores shortcomings of adapting differential privacy in explainable AI systems.
3. Contributed to a project for securing solar grid infrastructure. This is a Department of Energy funded project in collaboration with other schools and UARK departments.

Work Experience

Research Assistant, Technology Privacy University of Arkansas   Jan-May 2022

- Worked with Dr. Qinghua Li on a DoE funded project to secure solar energy grids.
- Participated in work as part of larger collaborative research between 5 research institutions and 3 industry partners
- Tested different security vulnerabilities for a web application used on the project

Technology Software Intern, Northrop Grumman Corporation   Summer 2019-2022
- Developed a regression test framework for updates to B-2 aircraft software
- Worked with a team to develop a database tool for internal career development
- Created and taught software courses for internal career development
- Developed components of a web-based form
- Tested components manual with SQL database entries.

Teaching, Presentations, Talks

Talk, Symposium on Surveillance: *"From Surveillance to Visibility"*   Apr 2024
- Presented on AI surveillance methods, mitigation techniques, and the role social questions play in further development and mitigation of AI surveillance technologies.
- Discussed critiques of AI and its use for surveillance in US immigration and policing programs
- Expanded on how research stances in security and privacy critique surveillance behaviors
- Highlighted the work of sociotechnical civil society groups in mitigating harmful surveillance behaviors

Digital Humanities Meet Up   Jan 2023
- Guest lecturer for an interdisciplinary group of faculty and students discussing technology's overlap with the Humanities.
- Co-hosted a brief overview on privacy topics and societal implications of AI
- Presented a brief overview of fundamental AI techniques and how they form a basis for AI concerns in society.

Guest Lecturer, Intro to Digital Humanities Course   Sep 2023
- Crafted a two-part lecture for a university course discussing technology's impact on society. This was a section on societal impacts of AI systems.
- Presented a brief overview of AI fundamentals, popular model architectures, dominant development practices, research norms, and core shortcomings of AI systems
- Crafted practical example comparing large language models (LLMs) to mini-LLMs. This was used to examine how trustworthy goals such as transparency are obscured across model architectures.
- Gave a brief overview of transformer-based models and how they support recent achievements
- Discussed bias and uncertainty in LLMs and generative models

Extracurriculars, Volunteerism, and Leadership

Queer in AI, policy group   Jan 2024-*present*
- Testified to NIST AI Safety Institute and other US governmental organizations on how AI development practices harm queer communities and industry
- Developing policy explainer for distribution to US legislators on mitigating AI's use for surveillance, doxing, and harms towards marginalized communities

Trustworthy Machine Learning Reading Group   Aug 2023 - *present*

- Hosts a weekly paper reading series on topics in Trustworthy Machine Learning and AI Ethics (e.g., causality, privacy, security, explainable methods, fairness)
- The impact of this group is about 40 people across different disciplines and levels of AI expertise

Section Member, Symphony of Northwest Arkansas (SoNA)   Jan 2023 – *present*

- Double Bassist for a regional symphony in Fayetteville Arkansas
- A 60-person ensemble from musicians across the US

St. James Food Pantry   Mar 2023 – *present*

- Perform general contracting work
- Handle the registration process and logistical tasks
- Offer technical solutions for handling pantry data

Eagle Scout Rank, Boy Scouts of America   Apr 2017

- Built a gazebo for a local school turned park
- Organized donations and volunteerism from people throughout the community
- Held numerous leadership positions