ALYCIA N. CAREY

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EDUCATION

Ph.D. Computer Science | Focus: Fair & Private Federated Learning *Aug. 2020 - Dec. 2024*
University of Arkansas, Fayetteville, AR GPA : 3.91 / 4.0

Honors B.S. in Computer Science | Minors: Mandarin Chinese, Mathematics *Aug. 2016 - May 2020*
University of Arkansas, Fayetteville, AR GPA : 3.854/4

AWARDS AND FELLOWSHIPS

Distinguished Doctoral Fellowship | University of Arkansas *Aug. 2016 - May 2024*
Arkansas Governor's Scholarship *Aug. 2016 - May 2020*

PUBLICATIONS

Estimating the Influence of Epsilon in Local Differential Privacy via Influence Functions
Carey, A.N. and Wu X., 2022. - In Development, ICDM

Robust Personalized Federated Learning under Demographic Fairness Heterogeneity
Carey, A.N., Du, W., and Wu, X., 2022. IEEE International Conference on Big Data

The Statistical Fairness Field Guide: Perspectives from Social and Formal Sciences
Carey, A.N. and Wu, X, 2022. Springer AI Ethics

The Causal Fairness Field Guide: Perspectives from Social and Formal Sciences
Carey, A.N. and Wu, X., 2022. Frontiers in Big Data, 5

On the Explanation and Implementation of Three Open-Source FHE Schemes - Honors Thesis
Advisor: Dr. Dale Thompson | May 2020, UARK Online Thesis Library

EXPERIENCE

TITANS CCD Graduate R&D Internship *May 2021 - Aug. 2022*
Sandia National Labs - New Mexico

- Undertook professional level research in machine learning, specifically in privacy and explainability of machine learning models. Produced publication ready material to disseminate knowledge to Sandia customers and the greater research community. Successfully drafted and defended a two research proposals to obtain $425,000 and $675,000 in multi-year funding. Collaborated with fellow researchers, within and outside the department, to achieve high-caliber research results. Presented complete research at both internal and external conferences.

Teaching Assistant, Department of CSCE *Jan. 2020 - May 2020*
University of Arkansas | CSCE 2014: Programming Foundations II

- Taught two sections of programming foundations II lab (C++ in a UNIX environment) with 30 students in each section. Responsible for grading labs as well as homework assignments and tests. Held weekly office hours to assist students with their classwork. Topics included: abstract data types, introduction to OOP (object-oriented programming), linked lists, stacks, queues, hash tables, binary trees, graphs, recursion, and searching and sorting algorithms.

LANGUAGE AND TECHNICAL SKILLS

Mandarin Chinese (Advanced Proficiency), Python, PyTorch, C++, Markdown, LaTex, Jupyter, Git, Anaconda, Technical writing and information synthesis

SERVICE AND ORGANIZATIONS

- Graduate Student Ambassador for the Computer Science and Computer Engineering Department (Current)
- Graduate Professional Student Congress Legislative Clerk and At-Large Representative for the College of Engineering, 2021
- Order of the Engineer, 2021 - Present
- Phi Sigma Rho, 2019 - 2020
- Peer Reviewer for the Springer Journal of AI and Ethics
- Other Peer Reviews:
  - Springer International Journal of Data Science and Analytics (1), 2021
  - Springer Human-Centric Intelligent Systems (1), 2022