

ALYCIA N. CAREY

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EDUCATION

Ph.D. Computer Science | Focus: Trustworthy Federated Learning

Aug. 2020 - May 2025

University of Arkansas, Fayetteville, AR - GPA : 3.929/4.0

Honors B.S. Computer Science | Minors: Mandarin Chinese, Mathematics

Aug. 2016 - May 2020

University of Arkansas, Fayetteville, AR - GPA : 3.854/4.0

AWARDS AND FELLOWSHIPS

P.E.O. Scholar Award (National, \$20,000)

Aug. 2023 - May 2024

Distinguished Doctoral Fellowship (University of Arkansas, \$88,000)

Aug. 2016 - May 2024

IEEE Big Data Travel Award (International, \$800)

Dec. 2023

Arkansas Governor's Scholarship (State, \$40,000)

Aug. 2016 - May 2020

SELECT PUBLICATIONS

Achieving Bi-Level Client Accuracy Parity in Differentially Private Federated Learning

Carey, A.N. and Wu, X., 2023. - In Development for 2024 ACM SIGKDD Conference

Randomized Response Has No Disparate Impact on Model Accuracy

Carey, A.N., Bhaila, K., and Wu, X., 2023. - Under Review 2023 IEEE International Conference on Big Data

Evaluating the Impact of Local Differential Privacy on Utility Loss via Influence Functions

Carey, A.N., Van, H., and Wu, X., 2023. - Under Review 2024 Siam Data Mining

HINT: Healthy Influential-Noise based Training to Defend against Data Poisoning Attacks

Van, H., Carey, A.N., and Wu, X., 2023. - IEEE International Conference on Data Mining

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

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 two research proposals to obtain \$425,000 and \$675,000 in multi-year funding. Collaborated with fellow researchers to achieve high-caliber research results that had direct impact on the lab's central mission. 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.

LANGUAGE AND TECHNICAL SKILLS

Mandarin Chinese (Advanced Proficiency), Python, PyTorch, C++, Markdown, LaTeX, Jupyter, Git, Anaconda

SERVICE AND ORGANIZATIONS

- Graduate Student Ambassador for the Computer Science and Computer Engineering Department, 2022 - Present
- Graduate Professional Student Congress Legislative Clerk, 2021 - 2022
- Graduate Professional Student Congress At-Large Representative for the College of Engineering, 2021 - 2022
- Peer Reviews:
 - Springer International Journal of Data Science and Analytics (1), 2021
 - Springer Human-Centric Intelligent Systems (1) 2022, (1) 2023
 - ACM Transactions on Knowledge Discovery from Data (1), 2023