

KIMBERLY WILLIAMSON

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EDUCATION

Cornell University
PhD, Information Science

August 2019 - December 2024

Cornell University
Master's, Information Science

August 2019 - December 2022

Iowa State University
Master's, Education

August 2009 - May 2011

Iowa State University
Bachelor's, Industrial Engineering

August 2005 - August 2009

PROFESSIONAL EXPERIENCE

Cornell University
Research Assistant/Data Scientist

Ithaca, NY, USA
June 2023 - Present

- Conducted a mixed methods study using quantitative data analysis and qualitative interviews to understand how instructors utilized data visualization to enhance instruction
- Applied data modeling skills to populate LMS database, generating insights for instructors to proactively address student behavioral patterns and developing a data strategy for LMS data
- Applied regression analysis techniques to measure the impact of predictive learning analytics on instructors' trust and usage, deriving data-driven conclusions for research projects
- Designed and executed experimental studies to quantify instructors' trust and usage of predictive learning analytics, applying principles of experimental design

Break Through Tech
Lead Instructor for Intro to ML Course

Remote
May 2024 - August 2024

- Improved student support and academic performance by coordinating teaching assistants and small breakout rooms, providing assistance in answering questions, and reinforcing the learning process
- Maintained a safe and inclusive learning environment by reinforcing the student code of conduct, tracking weekly attendance and participation, and delivering observations and feedback on student progress
- Ensured high-quality educational experience by grading assignments and lab homework within Canvas and leading weekly Course Support meetings
- Contributed to continuous improvement of the course by creating agendas and leading lab lectures, leveraging data analytics insights to improve course content
- Enhanced students' understanding of machine learning concepts by teaching and modifying lab content in an introduction to machine learning foundations course, leveraging pre-created course materials
- Facilitated collaborative learning by utilizing Figma boards to create a virtual environment for students to collectively solve various machine learning questions, enhancing engagement and teamwork
- Equipped students with essential skills in machine learning by instructing them on deep learning techniques and predictive models using TensorFlow in Python

Cornell University
Data Science Fellowship

Ithaca, NY, USA
August 2021 - May 2023

- Enhanced students' analytical skills by designing and conducting data science workshops for Cornell graduate students, providing advanced analytics expertise to the Cornell community
- Enhanced the data science skills of Cornell graduate students by designing and conducting data science workshops, utilizing R and GitHub for version control and code sharing
- Provided data-driven insights and solutions by acting as a data consultant to the Cornell community, leveraging R for data analysis and visualization, and creating cloud computing environments
- Improved client reporting capabilities by guiding the creation of visualizations with Looker, integrating best practices in BI tools

Education Testing Service
Data Visualization Intern

Remote
June 2022 - August 2022

- Collaborated on the development of a new assessment application incorporating data modeling and ETL processes
- Conducted user research to enhance user experience and application functionality on application prototypes
- Collaborated with product teams to ensure data governance and metadata management compliance

Utah Education Network

Full-Stack Software Engineer/Data Architect

Salt Lake City, UT, USA

September 2015 - August 2019

- Led the evaluation and selection of data warehouse components, including hardware and ETL software, for the State Longitudinal Data System, optimizing data storage and processing efficiency
- Served as the solutions architect and lead data engineer on the statewide longitudinal data system, providing technical project management by creating detailed system plans and mockups in Lucidchart
- Enhanced data analysis capabilities by developing and implementing modernized data warehouse systems and tools, translating user stories into technical solutions for the State Longitudinal Data System
- Created data governance structure which detailed how entities can access and use data in state-wide longitudinal data system
- Collaborated with product teams to design systems with a test-driven approach, ensuring high-quality data and implementing clustering techniques for enhanced analytics
- Participated in code review to ensure software quality and compliance with industry standards
- Improved team efficiency through the adoption of Agile methodologies while serving as a continuous delivery and DevOps Specialist, directing the integration of automated testing and CI/CD practices to improve SDLC
- Streamlined software development processes by directing research, recommendations, and integration of modernized software processes and knowledge across the team, enhancing iterative development and end-to-end solutions.

Kent State University

Sr Reporting Analyst

Kent, OH, USA

November 2012 - August 2015

- Led data extraction and business intelligence processes for student data across the University, utilizing SQL frameworks
- Implemented quality improvements in ODS by developing modifications to data standards, conducting data audits, and ensuring data validation following upgrades, contributing to increased data accuracy and efficiency
- Managed timetabling system for 1,000+ courses per semester, optimizing room inventory, faculty availability, and student scheduling needs to ensure smooth operations
- Collaborated with academic departments across eight campuses to communicate scheduling instructions, deadlines, and updates, fostering efficient coordination and communication
- Improved data accessibility and decision-making by leading data extraction initiatives using SQL and Oracle for various university units.
- Supported university-wide reporting and forecasting needs by providing ad hoc reports, utilizing SQL to extract and analyze learner records, registration, course scheduling, course catalogues, and course statistics

University of Nevada - Las Vegas

Registration & Systems Coordinator

Las Vegas, NV, USA

August 2011 - October 2012

SKILLS

Skills: Atlassian, Bootstrap, Data Analysis, Data Science, Data Structures & Algorithms, Development Operations (DevOps), Docker, JavaScript, JIRA, jQuery, Jupyter, Java, Linux/Unix, R, MySQL, Python NLTK, NumPy, Pandas, Postgres, Postman, REST APIs, SQL, Tableau, Natural Language Processing (NLP), Python, UI/UX Design, Web Development, PowerPoint/Keynote/Slides, Public Policy, Word/Pages/Docs, Excel/Numbers/Sheets, Visual Studio, Outlook, cloud technologies

AWARDS, FELLOWSHIPS, & GRANTS

- 2024 Innovation Science for Education Analytics (ISEA), Data Science Fellow
- 2021-2023 Senior Data Science Fellow, Cornell University - Center for the Social Sciences
- 2021 PhD Outstanding TA Award, Cornell University - Department of Information Science
- 2020-2021 Towards Repair: Understanding the Intersections of Race and Computing Technology, Cornell University - Media Studies Graduate Working Group

PUBLICATIONS

- Ferguson, R., Khosravi, H., Kovanovi, V., Viberg, O., Aggarwal, A., Brinkhuis, M., Buckingham Shum, S., Chen, L. K., Drachsler, H., Guerrero, V. A., Hanses, M., Hayward, C., Hicks, B., Jivet, I., Kitto, K., Kizilcec, R., Lodge, J. M., Manly, C. A., Matz, R. L., Meaney, M. J., Ochoa, X., Schuetze, B. A., Spruit, M., Van Haastrecht, M., Van Leeuwen, A., Van Rijn, L., Tsai, Y.-S., Weidlich, J., Williamson, K., & Yan, V. X. (2023). Aligning the Goals of Learning Analytics with its Research Scholarship: An Open Peer Commentary Approach. *Journal of Learning Analytics*, 10(2), 14–50. <https://doi.org/10.18608/jla.2023.8197>
- Williamson, K. & Kizilcec, R. F. (2022). Large-scale Analysis of Discussion Networks in College Courses. *Proceedings of the Ninth ACM Conference on Learning @ Scale*, 456–460. <https://doi.org/10.1145/3491140.3528321>
- Williamson, K. & Kizilcec, R. F. (2022). Review of Learning Analytics Dashboard Research in Higher Education: Implications for Justice, Equity, Diversity, and Inclusion. In *Proceedings of the 12th International Conference on Learning Analytics and Knowledge (LAK)*. <https://doi.org/10.1145/3506860.3506900>
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- Williamson, K. & Kizilcec, R. F. (2021). Learning Analytics Dashboard Research Has Neglected Diversity, Equity and Inclusion. Proceedings of the Eighth ACM Conference on Learning @ Scale, 287–290. <https://doi.org/10.1145/3430895.3460160>
- Williamson, K., & Kizilcec, R. (2021). Effects of Algorithmic Transparency in Bayesian Knowledge Tracing on Trust and Perceived Accuracy. Educational Data Mining.