Alex Okeson

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Education

PhD – Computer Science & Engineering, University of Washington   *2022*
>   Advised by James Fogarty, GPA: 3.8
>   Thesis Committee: James Fogarty, Tim Althoff, Sean Munson, Amy Ko

MS – Computer Science & Engineering, University of Washington   *2021*
>   Committee: James Fogarty, Sean Munson

BS – Computer Science, University of Colorado Boulder   *2017*
>   Concentrations in Biology and Psychology, GPA: 4.0

Research Interests Applied ML, human computer interaction, interpretability, data science, healthcare

Skills Proficient: Python, data analysis techniques, ML interpretability tools, sklearn, R, Keras,
>   qualitative study design, quantitative data analysis
>   Familiar: D3, Spark, Julia, JavaScript, SQL, Java, C

Academic Work Experience and Research Projects

Personal Health Records Machine Learning Tool   *June 2021-Sept 2021*
Host: Hui Wu, Co Host: Mukil Kesavan, Google Health/Fitbit
>   Created an end to end ML sandbox tool supporting ranking and classification experiments on personal
>   health data.

Actionable Bayesian Analysis for Evolving Health Goals   *Feb 2019-present*
Advisor: James Fogarty, University of Washington
>   Building and user testing Bayesian network analysis framework to support individuals analyzing personal
>   health data in evolving real life contexts.

Interpretability Tool Workflows and Uses of Ranked Aggregations   *June 2020-Dec 2021*
Advisors: Jenn Wortman Vaughan and Hanna Wallach, Microsoft Research
>   Conducted and analyzed a qualitative study on how experienced users use machine learning interpretability
>   tools and the pitfalls they experience. Designed, conducted, and analyzed an artifact based qualitative study
>   evaluating an alternative global ranking aggregation scheme.

ICU Glucose Measurement Validity   *Sept 2019-present*
Advisors: James Fogarty, Tim Althoff, and Brent Wisse MD, University of Washington
>   Predicting validity of different types of ICU blood glucose tests. Evaluating how glucose test uncertainty
>   affects ICU decision making and potential for explainable ML predictions.

Dementia Onset Prediction with Explanations   *Jan 2019-Feb 2021*
Advisors: Tim Althoff and Su-In Lee, University of Washington
>   Predicting near-term dementia onset using easily measured diagnostic tests. Using explainable ML
>   techniques to inform diagnostic insights and validate results.

Computational Psychiatry   *June 2018-Jan 2019*
Advisor: Bing Brunton, University of Washington
>   Explored new classification and categorical variable encoding schemes for mental illness using
>   unsupervised ML methods.

Machine Learning for the Operating Room   *Sept 2017-June 2018*
Advisor: Su-In Lee, University of Washington
>   Implemented proportional hazards machine learning model to predict if/when a surgery patient will
>   experience hypoxemia. Contributed to SHAP interpretability method open source code.

Cutting Edge Anesthesia   *April 2018-June 2018*
Advisor: Jeff Heer, University of Washington
>   Designed customizable surgical anesthesia monitor using D3 based on interviews with doctors.

Artificial Pancreas Verification Algorithm   *Aug 2015-May 2016*
Advisor: Sriram Sankaranarayanan, University of Colorado Boulder
>   Created and implemented algorithm to generate human blood glucose curves to test artificial pancreas.

Publications

Alex Okeson. [Strategies for Selecting and Adapting Machine Learning Systems to Support Different Types of Experts](). *PhD Thesis, University of Washington, 2022.*

Alex Okeson, Rich Caruana, Nick Craswell, Kori Inkpen, Scott M. Lundberg, Harsha Nori, Hanna Wallach, Jennifer Wortman Vaughan. [Summarize with Caution: Comparing Global Feature Attributions](). *IEEE Data Engineering Bulletin on Responsible AI and Human-AI Interaction, 2021.*

Nicasia Beebe-Wang*, **Alex Okeson***, Tim Althoff**, Su-In Lee**. [Efficient and Explainable Risk Assessments for Imminent Dementia in and Aging Cohort Study](). *IEEE Journal of Biomedical and Health Informatics Informatics, 2021.* (* and ** indicate equal contribution)

Alex Okeson, James Fogarty. [Opportunities for Bayesian Network Learning in Personal Informatics Tools](). *CHI 2020 Workshop on Artificial Intelligence for HCI: A Modern Approach.*

Awards and Honors

UW CSE 1st Year Research Fellowship	*2017-18*
Outstanding Graduate of the College of Engineering for Academic Achievement	*2017*
CU Boulder Chancellor's Recognition Award	*2017*
CU Boulder CS Best Capstone Project Award	*2017*
Rocky Mountain Celebration Women in Computing 1st Place Undergraduate Poster Competition	*2016*
Tang Fund Scholar for Study Abroad in Xi'an China	*2016*
University of Colorado Engineering Honors Program	*2014-17*
American Collegiate Rowing Association Academic All American	*2015*

Work Experience

Database and Data Lead *Aug 2016-May 2017*
Wise Cork, Boulder, CO
> Built, developed, and tested wine cellar tracking and education iOS app. Led data research and acquisition initiatives. Wrote Python and Swift based web scrapers.

Software Engineering Intern *June 2016-Aug 2016*
Avanade Inc., Seattle, WA
> Built retail customer experience bot with Innovation Lab team.

Office of Engineering and Technology Intern *June 2015-July 2015*
Federal Communications Commission, Washington, DC
> Debugged and analyzed internet service provider performance data in SQL database. Edited and fact-checked Measuring Broadband America 2015 Report.

Undergraduate Research Assistant *Oct 2014-May 2015*
Laboratory for Atmospheric and Space Physics, Boulder, CO
> Streamlined data collection and created analysis software for NASA's New Horizons mission.

Research and Development Intern *June 2014-July 2014*
Next Energy Technologies, Santa Barbara, CA
> Programmed CNC milling machine operations to increase solar cell geometric efficiency by over 5%.

Teaching Assistant Experience

UW CSE547: Machine Learning for Big Data with Prof. Tim Althoff	*Spring 2019*
UW CSE417: Algorithms and Computational Complexity with Prof. Walter Ruzzo	*Winter 2019*
UW CSE373: Data Structures and Algorithms with Prof. Ben Jones	*Summer 2018*
CU CSCI2400: Computer Systems with Prof. Rick Han	*Spring 2017*
CU EHON1151: Critical Encounters with Prof. Scot Douglass	*Fall 2015, Fall 2016*

Service

DUB (Design Use Build) Group Student Coordinator	*2021-2022*
UW CSE First Year Grad Student Mentoring Coordinator	*2018-2019*
CU Boulder Grace Hopper Student Leader	*2015*