Alex Okeson

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Education

PhD – Computer Science & Engineering, University of Washington *Expected: June 2022*
Advised by James Fogarty, GPA: 3.80

BS – Computer Science, University of Colorado Boulder *2014-17*
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, R, sklearn, Keras, qualitative study design, qualitative data analysis
Familiar: D3, Spark, Julia, JavaScript, SQL, Java, C

Research Projects

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-present*
Advisor: 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-present*
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.

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%.

Website Designer *June 2014-Aug 2014*
New Horizons Preschool, Anchorage, AK
Worked with non-profit client to integrate new web design and technologies with current operations.

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

UW CSE First Year Grad Student Mentoring Coordinator *2018-2019*
CU Boulder Grace Hopper Student Leader *2015*