

## Alex Okeson

amokeson [at] gmail [dot] com

[aokeson.github.io](https://aokeson.github.io)

### Education

**PhD – Computer Science & Engineering**, University of Washington

*Expected: March 2022*

Advised by James Fogarty, GPA: 3.8

**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, R, sklearn, Keras,  
qualitative study design, qualitative data analysis

Familiar: D3, Spark, Julia, JavaScript, SQL, Java, C

### **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-present*

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**

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

**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 1 <sup>st</sup> 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 1 <sup>st</sup> 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**

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*