

# RYAN KOCH

Research engineer with strong quantitative & qualitative data analysis skills. Trained to use data to drive product development and business insights.

## Contact

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## Skills

### PROGRAMMING

JavaScript  
HTML  
CSS  
C++  
Python  
SQL

### USER EXPERIENCE UI/UX

Quantitative & Qualitative Analysis  
Conference Presentations  
Interviews  
Survey Design  
Wire Framing  
Mock-ups  
Competitive Analysis  
Task Analysis  
Prototyping  
Usability Studies

### MACHINE LEARNING

matplotlib  
NumPy  
Scikit-learn  
Keras  
TensorFlow  
Classification  
Regression  
pandas  
Data Visualization  
Data Exploration  
Data Analysis

## Awards

Outstanding Research  
Fisher College Center for  
Leadership in Public Service; 2015

Outstanding Student  
Fisher College Psychology  
Department; 2016

Student of the Year  
Fisher College Psychology  
Department; 2013

## Certifications

Six Sigma Black Belt

## Education

Tufts University  
M.S. Human Factors Engineering  
School of Engineering  
Medford, MA

2017 to Current

Fisher College  
B.A. Psychology Magna Cum Laude  
Boston, MA

2016

## Experience

Google  
Applied Machine Learning Intensive Student  
Oakland, CA  
Feb. 2019 to May 2019

- Selected (3.5% acceptance rate) from over 600 applicants as one of a 21-person cohort to take part in a ten- week, project-based Machine Learning pilot program fully funded by Google at Mills College
- Analyze and clean visual data, and develop the ability to differentiate between machine learning models, diagnose modeling issues, and adjust input data accordingly
- Discern when machine learning is the optimal approach, versus other solutions
- Cultivated proficiency in SQL and Python
- Understand the ethical use of Artificial Intelligence and how to identify bias
- Attend weekly professional development workshops in topics covering technical presentation skills, giving and receiving feedback, and project management

Glass Social Media  
Co-Founder & UX Researcher  
Philadelphia, PA  
Jan. 2018 to Oct. 2018

- Spearheaded UX research by employing methods including a focus group, user interviews, journey mapping, and usability tests across low, medium and high fidelity prototypes
- Implemented a 'Build', 'Measure', 'Learn' philosophy while placing emphasis on validated learning to effectively allow data to drive development and design decisions through multiple version releases
- Executed development, marketing, and user testing sprints

Nuance Communications (DRIVE) Laboratory  
User Experience Research Intern  
Cambridge, MA  
Jan. 2017 to June 2017

- Immersed myself in the automotive industry while working at the Design Research Innovation and in-Vehicle (DRIVE) lab
- Augmented early concept research of natural language processing products centered around multi-modal in-vehicle experience
- Designed online surveys with Survey Monkey
- Analyzed survey data to provide insights to senior staff

Massachusetts Institute of Technology (MIT) Lincoln Laboratory  
Human Factors Research Assistant  
Lexington, MA  
May 2016 to Sept. 2016, July 2015 to Sept. 2015

- Executed a heuristic evaluation to collect data complementing a usability test on law enforcement video analytic software
- Developed an executive summary of law enforcement best practices
- Facilitated the creation of a serious game implemented in a focus group to collect data for a utility analysis on public health surveillance software

## Relevant Course Work

Advanced Statistics and Probability Theory  
2017

- Learned Bayesian and Frequentist perspectives on probability theory, statistical inference, analysis of variance, nonparametric analysis, regression, Markov Chain Monte Carlo algorithms, Signal Detection Theory, t-tests, ANOVA's
- Lab work focused on reinforcing in-class concepts using R and SASS

Human-Machine System Design  
2017

- Studied information processing, decision making, reaction times, Signal Detection Theory, computer-interface design, and auto/semi-automated systems.
- Reinforced topics by programming and building a Lego Mindstorm Robot.

Human Factors in Product Design  
2017

- Identified and refined user requirements, employed project management principles, and studied user-centered design solutions for various assignments regarding product and system development
- Prototyped, designed, and tested a user interface for KCUS Boston to alert bus drivers of cyclists to mitigate bus-cyclist collision scenarios

## Publications

Koch, R. Intriligator, J. (submitted 2019). Human Factors Engineering and Machine Learning: Designing Intelligent Human-Machine Systems. Ergonomics in Design Special Issue: Machine Learning, Artificial Intelligence, and Human Factors Design.

Journal Publications  
Sanders, T. L., Kaplan, X., Schwartz, M., Koch, R., Hancock, P. A. (2017). The Relationship Between Trust and Use Choice in HRI. The Journal of Human Factors.