Zilin Ma

Curriculum Vitae

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github.com/zilinma

Education

2019 - **Harvard University**, Cambridge, MA.
Ph.D. candidate in Computer Science
School of Engineering and Applied Sciences, SEAS
Advisor: **Prof. Krzysztof Gajos**

2015 - 2019 **Bucknell University**, Lewisburg, PA.
Magna Cum Laude
B.Sc. in Computer Science
B.A. in Physics
Minor in Russian Studies

Research Experience

2018 **Stanford University**, HCI Group.
Advised by **Prof. Michael Bernstein**.
- Evaluated the effectiveness of **HabitLab** with user behavioral data.
- Developed behavioral coaching mechanisms with neural network and multi-armed bandit algorithms to reduce user attrition rates and time spent on unproductive websites.
- Evaluated the effects of intervention suggestions through AB Tests.

2018 – 2019 **Bucknell University**, HCI Group.
Advised by **Prof. Evan Peck**.
- Segmented webcam eyetracking data to predict accuracy due to lighting conditions and advice the user to obtain higher accuracies.

2016 - 2017 **Geisinger Health System**, Imaging Science and Innovation.
Advised by **Prof. Joshua Stough**, **Doctor Christopher Haggerty** and **Doctor Brandon Fornwalt**.
- Implemented a convolutional neural network to automatically segment heart substructures in CMR, achieving a Dice index of 97% on a dataset of 50 patients. Results Compatible with manual segmentation.
- Produced data visualizations that makes our research accessible to the public.

Publications

2019 **Conservation of Procrastination: Do Productivity Interventions Save Time Or Just Redistribute It?**.
Geza Kovacs, Andrew Gregory, **Zilin Ma**, Zhengxuan Wu, Golrokh Emami, Jacob Ray, Michael Bernstein. CHI, 2019.
`https://hci.stanford.edu/publications/2019/conservation/conservation-chi2019.pdf`

2018 **Ventricular segmentation and quantitative assessment in cardiac MR using convolutional neural networks**.
Joshua V. Stough, Joseph DiPalma, **Zilin Ma**, Brandon K. Fornwalt, Christopher M. Haggerty. SPIE Medical Imaging Conference, 2018.
`https://doi.org/10.1117/12.2291534`

Projects

Jan 2020 **Life - a visualization of world population data**, *MIT Reality Hack*.
https://devpost.com/software/life-cmlf20
- An VR application that visualizes live world population data by using the nature and landscape as the canvas.
- The user can pick up random flowers on the ground that represents the new life being born at each moment. The users will be able to see the unique id of the flower, representing a unique life on earth.

Oct 2018 - Oct 2019 **Bias in Face Recognitions**, *Bucknell University*.
medium.com/@johnangileri/phase-3-appearance-based-bias-in-artificially-intelligent-systems-15ee3f6bfc65
- Built a neural network that classifies the facial expression, sex and ethnicity of the input image using Chicago Face Dataset.
- Investigated the effects of a skewed dataset on the classification accuracy of less represented classes.
- Investigated the effects of greyscaling the data, which reduces skin tone difference and bias in the classification and improves average classification accuracy.

Aug 2018 - May 2018 **Redesign of Artdeco Theater Experience**, *Bucknell University*.
AdobeXD demo
https://medium.com/@gah020/designing-for-visitors-d02eda08c4b3
- Redesigned the Campus Theatre's website for mobile phones, specifically catering to the needs and preferences of visitors to the local area of Lewisburg.
- Prototyped using Adobe XD.

Aug 2018 - May 2018 **'Burg-Eats**, *Bucknell University*.
github.com/zilinma/food-pantry
- Built a mobile app that connects the local food pantries with the local communities experiencing food insecurity.
- Publicizes pantries that were not known to the public due to administrative reasons.
- Allows the users, including Bucknell students, to search the nearest pantry and interact with them anonymously.
- Allows local food pantries managers to edit and display information to the users in a fast and seamless way.
- Implemented using React Native, Firebase and Google Map API.

Awards

2018 – 2019 Sigma Pi Sigma Physics Honor Society

2017 Program for Undergraduate Research at Bucknell

2016 – 2018 Dean's List

2017 – 2018 Residential Education Academic Excellence Award

Leadership & Activities

Jun 2018 - May 2019 **President & Treasurer**, *Human Centered Design Club*, Bucknell University.
- Created the first student club at Bucknell University dedicated to the discussion and exploration of human aspects in tech as one of the two co-founders.
- Wrote the first constitution and is responsible for monetary and logistic work as the president and treasurer.
- Organized community dinners for the campus diversity issues that are related to how people use technologies, social media on campus.

Oct 2017 - May 2018 **Student Web Developer**, *Bucknell Library & IT*, Bucknell University.
- Developed an Emergency Contact Update web application that allows Bucknell faculty and students to seamlessly update their emergency contacts, which were previously updated through three different locations in the school websites.
- Communicate the web application with the school database using Oracle Database and PL/SQL.

Aug 2016 - May 2018 **Residential Advisor**, *Residential Education*, Bucknell University.

- Supervised and managed the LGBTQ Affinity Housing on Bucknell campus.
- Enforced university guidelines and cultivated campus diversity by programming events and counseling with residents.

Teaching Experience

Bucknell University

2018 **Teaching Assistant** Algorithms and Data Structures

2017 – 2018 **Teaching Assistant** Classical Mechanics Lab

2016 – 2017 **Teaching Assistant& Study Group Leader** Classical and Modern Physics I & II

2016 – 2017 **Teaching Assistant** Engineering 100

2016 **Teaching Assistant** Introduction to Computer Science I

Programming Skills

Languages Python, Java, JavaScript, Mathematica, Swift, R, LaTeX

Libraries SciPy, TensorFlow, Scikit-learn

Web Dev ReactJS/ React Native