

# Brianna Kozemzak

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*Passionate researcher with strong problem-solving and critical thinking skills seeking full-time employment as a Software Engineer.  
Most interested in backend and systems opportunities located in the Bay Area or Minnesota beginning Fall 2019.*

## Education

### Stanford University

ACADEMIC M.S. IN BIOMEDICAL INFORMATICS  
GPA: 3.59/4.00

Palo Alto, CA

Sept. 2017 - June 2019

### Saint Mary's College

B.S. IN COMPUTING AND APPLIED MATHEMATICS  
GPA: 3.99/4.00

South Bend, IN

Aug. 2013 - May 2017

## Coursework

- Design and Analysis of Algorithms
- Computer Organization and Systems
- Machine Learning
- Data Structures
- Web Applications
- Deep Learning

## Projects

### Nintendo 64 ROM Hack: Harvest Moon

PYTHON, FLASK, REACT

Palo Alto, CA

Dec. 2018 - Present

- Automated extraction of process ID for concurrently running emulation based on ROM name using the psutil library.
- Inspected ROM memory to identify locations of bytes encoding hidden game state values using system calls.
- Built a Flask server that responds to requests with JSON mappings of the raw game state bytes into human-readable values.
- Created a single page application that polls the backend to display the current values as the game is played using React.

### Heap Allocator

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Palo Alto, CA

March 2018

- Implemented an implicit heap allocator and an explicit heap allocator with custom malloc, realloc, and free functions.
- Augmented a test harness by adding methods for validating a heap structure after each call to the explicit or implicit allocator.

### Photo Sharing Application

MONGODB, EXPRESS.JS, ANGULARJS, NODE.JS, HTML, CSS

Palo Alto, CA

May 2018 - June 2018

- Developed a single page web application for sharing, commenting on, and favoriting photos.
- Adhered to a MVC architecture and included session management with the notion of a user being signed in.

## Research

### Segmentation of Prostate Lesions using Convolutional Neural Networks

KERAS, PYTHON, JUPYTER

Palo Alto, CA

April 2018 - Present

- Built SegNet and U-Net with a VGG16 encoder pre-trained on ImageNet to achieve a test dice score of 0.58 in Keras.
- Incorporated dropout and data augmentation to reduce variance and utilized weighted cross-entropy loss to address class imbalance.
- Visually presented the results of the project using a Jupyter notebook built on the existing model pipeline.

### Cluster Validation for Autism Subtypes

NUMPY, PANDAS, PYTHON, JUPYTER

Palo Alto, CA

Sept. 2017 - Dec. 2017

- Analyzed soft k-means clustering results generated using a Generalized Low Rank Model with logistic loss on autism phenotype data.
- Tracked the movement of individuals between clusters as the number of clusters changed to assess their biological meaningfulness.

## Leadership & Awards

- 2017 **Graduate Research Fellowship**, National Science Foundation
- 2017 **Valedictorian**, Saint Mary's College
- 2016 **Elizabeth Lin Lo Award**, Mathematics and Computer Science Department, Saint Mary's College
- 2015 **PRISM Women Scholars Program**, National Science Foundation
- 2015 **Student Independent Study and Research (SISTAR) Grant**, Center for Academic Innovation, Saint Mary's College