

# COLTEN WOOD DIANNI

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## EDUCATION

### University of Wisconsin - Madison

Machine Learning, MS/PhD, GPA: 3.88

Madison, WI

Sept 2021-Cur.

- **Programming Coursework:** Learning Based Image Synthesis & Manipulation, Advanced Deep Learning, Machine Learning, Matrix Methods in Machine Learning

### Carleton College

Computer Science, BA, GPA: 3.82

Northfield, MN

Sept 2017-June 2021

- **Programming Coursework:** Machine Learning, Data Science, Algorithms, Linear Algebra, Numerical Analysis, Programming Languages Design & Implementation, Computability & Complexity, Software Design

## EMPLOYMENT

### University of Wisconsin - Madison

Computer Science Researcher

Madison, WI

Sept 2021-Cur.

- Developed generative models to correct for covariate shift during cancer prediction model deployment using python
- Performed membership inference attacks on convolutional neural networks to reconstruct the models' training set using a generative adversarial network
- Organized data processing and analysis pipelines, allowing attack to transfer for various datasets and model architectures
- **Advisor:** Dr. Somesh Jha
- **Utilized:** Convolutional Neural Network, GAN, OOD-Detection, Computer Vision, Image Classification, Supervised Learning

### Carleton College

Computer Science Researcher

Northfield, MN

Jun 2019-June 2021

- Conducted exploratory research investigating the effects of menstrual cycle hormones on insulin sensitivity in individuals with type I diabetes by analyzing blood glucose and insulin time series data
- Utilized dynamic-time-warping while performing clustering in order to identify average day patterns for individuals
- **Advisor:** Dr. Dave Musicant
- **Utilized:** Time Series Data, Clustering, Regression Models, Dynamic-time-warping

### Ottawa Hospital Research Institute

Computer Science Researcher

Ottawa, ON

Jun 2020-Aug 2020

- Predicted localized gene expression within tissue samples by training a convolutional neural network on H&E slide images and spatial transcriptomics data
- **Advisor:** Dr. Theodore Perkins

### Prep Network

Data Analyst

Maple Grove, MN

Dec 2019-Jan 2020

- Built a gate revenue prediction model using attending teams' proximity to tournaments
- Calculated optimal day, time, and subject of company Twitter and email advertisement

## TEACHING ASSISTANT

### University of Wisconsin - Madison

Intro to Artificial Intelligence (Head TA)

Madison, WI

Sept 2022-Cur

### University of Wisconsin - Madison

Programming I (Head TA)

Madison, WI

Sept 2021-June 2022

### Carleton College

Programming Languages Design & Implementation

Northfield, MN

Sept 2020-Mar 2021

## PROJECTS

### Keystrokes as a Password - Carleton College

Lead Engineer

Sept 2020-Mar 2021

- Designed a two-factor authentication method to identify users based on typing patterns using a recurrent neural network
- Achieved a true-user acceptance rate of 95% with a false-user acceptance rate of only 22%

## LEADERSHIP

### Carleton Student Association

Class Representative

Northfield, MN

Mar 2018-Mar 2021

- Established a seminar series covering topics such as budgeting, investing, health insurance, and job benefits to prepare students for life after graduation

## SKILLS

**Software Languages:** (proficient): Python, Java, C, R (familiar): SQL, HTML, CSS, LaTeX