COLTEN WOOD DIIANNI

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EDUCATION

University of Wisconsin - Madison **Madison, WI**
Machine Learning, MS/PhD, GPA: 3.88 *Sept 2021-Cur.*
- **Programming Coursework:** Learning Based Image Synthesis & Manipulation, Advanced Deep Learning, Machine Learning, Matrix Methods in Machine Learning

Carleton College **Northfield, MN**
Computer Science, BA, GPA: 3.82 *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 **Madison, WI**
Computer Science Researcher *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 **Northfield, MN**
Computer Science Researcher *Jun 2019-Jun 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 **Ottawa, ON**
Computer Science Researcher *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 **Maple Grove, MN**
Data Analyst *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 **Madison, WI**
Intro to Artificial Intelligence (Head TA) *Sept 2022-Cur*

University of Wisconsin - Madison **Madison, WI**
Programming I (Head TA) *Sept 2021-Jun 2022*

Carleton College **Northfield, MN**
Programming Languages Design & Implementation *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 **Northfield, MN**
Class Representative *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
Technologies: (proficient): CNN, GAN, MLP (familiar): Transformer Networks, NLP, Hadoop, Spark, Map-Reduce