Ben Kizaric

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EDUCATION

UNIVERSITY OF WISCONSIN

MS in ECE: Machine Learning & Signal Processing
May 2023 | Madison, WI

BS in Computer Science
BS in Data Science
May 2022 | Madison, WI
Cum. GPA: 3.84 / 4.0

COURSEWORK

GRADUATE

Graduate Machine Learning
Neural Networks
Image Processing

UNDERGRADUATE

Probability & Information Theory in Machine Learning
Matrix Methods in Machine Learning
Data Science in Madison
Data Programming I & II
Introduction to Statistical Modeling I & II
Operating Systems
Computer Vision

SKILLS

PROGRAMMING

Python • C# • Java • Javascript (Node) Typescript • R • C • Matlab

DATA SKILLS

Query & Wrangling
SQL • Excell • Python & Pandas • Web Scrapping • R & tidyverse
Infrastructure & Workflow
Apache Spark • AWS • Cluster Computing • Unit Testing • git • Scrum, Kanban
Visualization & BI
PowerBI • matplotlib • ggplot
Machine Learning & Statistics
Cross-Validation • Feature Engineering • Hypothesis Testing • Linear Algebra
Supervised ML: Scikit-Learn • Tensorflow • Linear & Non Parametric Regression • Regularization • Generative & Discriminative Classifiers • Ensemble Methods • Semi-Supervised Learning
Unsupervised ML: Missing Data Imputation • Dimensionality Reduction • Cluster Analysis • Subspace Clustering

EXPERIENCE

WISCONSIN INSTITUTE FOR DISCOVERY

Research Assistant Feb 2022 – Present (Part-Time) | Madison, WI

- Designed original machine learning algorithms and implemented them in modular, high-performance python.
- Reviewed literature and composed research papers for publication.
- Leveraged distributed computing to perform large-scale cross-validation.

NORTHWESTERN MUTUAL

Data Science & Analytics Intern June 2022 - Aug 2022 | Milwaukee, WI

- Performed unsupervised cluster analysis with Scikit-Learn on application usage patterns to identify new categorizations as part of a productionalized machine learning pipeline. Presented findings to technical and non-technical employees.
- Utilized Apache Spark to perform-large scale data analytics of application usage, drawing from semistructured log data stored in AWS S3. Delivered insights for internal stakeholders.
- Used Pandas, Python, and Excell to aggregate multiple unstructured data sources into a form ready for analysis and predictive modeling, then generated reports using PowerBI for business stakeholders.

Software Engineering Intern June 2021 - Aug 2021 | Milwaukee, WI

- Composed both front-end ReactJS and back-end Typescript code to build web applications that interacted with a variety of pre-existing microservices.
- Setup and improved continuous integration pipelines with Gitlab, including running automated integration tests within a docker environment.

UW MADISON CDIS | Peer Mentor

Sep 2020 – Dec 2020 (Part-Time) | Madison, WI

- Developed Python curriculum and assignments for the class.
- Held weekly meetings and office hours with teams of students, helping to keep them connected to the course material, and fellow classmates.

MILWAUKEE TECH HUB | Data Operations Intern

June 2020 - May 2022 (Part Time) | Milwaukee, WI (Remote)

- Selected from over 800 applicants to lead a multi-disciplinary remote team.
- Worked directly with multiple organizations to gather, analyze, and display public & proprietary education & jobs data on a custom-made public portal, managed by a proprietary internal website and using PowerBI for visualization.
- Used the Microsoft Power Ecosystem to create an internal CRM tool.

RESEARCH & PROJECTS

• **Classifying Incomplete Data with a Mixture of Subspace Experts**: A novel method for performing supervised / semi- supervised learning on data with many missing values. An ensemble method that uses subspace clustering to find patterns that base learners learn on, with their results averaged via a mixture of experts.
• **Coarse Semantic Segmentation with multi-scale PCA**: A final project for a Computer Vision course. Performed semantic segmentation on the cityscapes data-set using a sliding, multi-scale pyramid where each scale was dimensionality-reduced with PCA, with the goal of creating a small model for a complex task.
• **City of Madison Housing Project**: A project completed in partnership with the City of Madison to investigate the fairness of tax-assessed home values with respect to racial demographics. Used a large dataset of homes to conduct analysis, produce standard and geospatial visualizations, and created models to evaluate fairness.
• **PHOSVD Image Compression**: A new image compression format that uses subspace clustering to outperform existing methods of image compression.