

Blake Martin

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EDUCATION

Carnegie Mellon University | Pittsburgh, PA

Dec. 2022

Master of Science in Machine Learning

University of Michigan | Ann Arbor, MI | 4.00/4.00 GPA

May 2021

Bachelor of Science in Data Science with Mathematics Minor

- Deep Learning for Computer Vision
 - Unsupervised Computer Vision
 - Introduction to Machine Learning
 - Conversational Artificial Intelligence
 - Machine Learning for Affective Computing
 - Numerical Methods
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PROFESSIONAL EXPERIENCE

Software Development Engineering Intern | Amazon

May 2021 – Aug. 2021

- Programmed heuristic solutions of the vehicle routing problem to optimize driver transport tours, reducing latency by a factor of 2-4 depending on problem size

Instructional Aide (Intro to ML) | University of Michigan

Sep. 2020 – Apr. 2021

- Led discussions, designed assignments, and provided help in office hours regarding ML concepts
- Provided solutions to new accessibility challenges posed by the virtual semester

ML Algorithms Intern | KLA

June 2020 – Aug. 2020

- Performed self-supervised representation learning with autoencoders and simCLR in TensorFlow
- Developed algorithms that produce encodings of large images 3x faster than with previously used methods in transfer learning tasks while maintaining downstream predictive power

Advanced Engineering Intern | Gentherm

May 2019 – Aug. 2019

- Extracted accurate predictions of occupant weight, height, gender, and clothing insulation from a car seat pressure distribution while reducing sensor area required by 98% (*patent pending*)
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RESEARCH EXPERIENCE

Infinite Outcome Prediction Markets | University of Michigan

Dec. 2020 – July 2021

- Designed a new probabilistic aggregation mechanism to capture Bayesian belief distributions of traders and simulated effects of trader characteristics on compensation (*workshop paper*)

Computational Physics Group | University of Michigan

Oct. 2018 – Feb. 2021

- Constructed 3D Convolutional Neural Networks that predict effective diffusivity of microstructures in batteries given volumetric image representations
- Implemented gradient descent and physics-based adjoint optimization to analyze MRI scans and model mechanics that govern brain folding in development (*journal publication*)

Cytogenetics AI | Beaumont Health System – Royal Oak

Apr. 2019 – Dec. 2020

- Built a Convolutional Neural Network that can differentiate eight classes of normal and abnormal chromosomes associated with myeloid leukemia at 94% accuracy (*conference presentation*)
 - Applied k-means clustering to extract individual chromosome pairs from karyotype images
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SKILLS

Programming Languages: Python, C++, JAVA, R, SQL, MATLAB

ML and Data Mining Libraries: PyTorch, TensorFlow, scikit-learn, OpenCV, NumPy, Pandas, Matplotlib

Technical Proficiencies: Visual Studio Code, Windows Subsystem for Linux, Git, Jupyter Notebook