Blake Martin

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EDUCATION

Carnegie Mellon University | Pittsburgh, PA **Expected Graduation: Dec. 2022**
M.S. in Machine Learning

University of Michigan | Ann Arbor, MI | 4.00/4.00 GPA **Sep. 2018 – May 2021**
B.S.E. 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

WORK EXPERIENCE

Software Development Engineering Intern | Amazon **May 2021 – Present**

- Implementing heuristic solutions of the vehicle routing problem to optimize driver transport tours

ML Instructional Aide (EECS 445) | 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
- Instructed on topics including SVMs, neural networks, decision trees, boosting, and clustering

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 their car seat pressure distribution while reducing sensor area required by 98% *(patent pending)*

RESEARCH EXPERIENCE

Infinite Outcome Prediction Market Research (University of Michigan) **Dec. 2020 – July 2021**

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

Computational Physics Group (University of Michigan) **Oct. 2018 – Feb. 2021**

- Developed 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)*

CytogeneticsAI Research (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)*
- Implemented k-means clustering to extract individual chromosome pairs from karyotype images

SKILLS

Programming Languages: Python, C++, JAVA, R, SQL, MATLAB
ML and Data Mining Libraries: PyTorch, TensorFlow, scikit-learn, OpenCV, NumPy, Pandas, Matplotlib
Technical Proficiencies: VS Code, WSL, Git, Jupyter Notebooks, Azure DevOps