# Blake Martin

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## EDUCATION

**Carnegie Mellon University** Pittsburgh, PA
*Master of Science in Machine Learning* Dec. 2022

**University of Michigan** Ann Arbor, MI
*Bachelor of Science in Data Science with Mathematics Minor | GPA: 4.00/4.00* May 2021

- Coursework: Deep Learning for Computer Vision, Unsupervised Computer Vision, Conversational Artificial Intelligence, Machine Learning for Affective Computing
- Instructional Aide for Introduction to Machine Learning (Fall 2020, Winter 2021)

## PROFESSIONAL EXPERIENCE

**Amazon** Seattle, WA | Remote
*Software Development Engineering Intern* 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

**KLA Corporation** Ann Arbor, MI | Remote
*ML Algorithms Intern* 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

**Gentherm** Northville, MI
*Advanced Engineering Intern* 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)*

## 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

## 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