MICAH BALDONADO

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EDUCATION

Carnegie Mellon University Pittsburgh, PA
Master of Science in Artificial Intelligence Engineering - Biomedical Engineering – GPA: 4.00/4.00 December 2025
Biomedical Engineering Master's Student Ambassador
Current Relevant Coursework: Machine Learning and AI for Engineers, Systems and Tool Chains for AI Engineers, Introduction to Deep Learning, Clinical Translations of AI

University of North Carolina at Chapel Hill & NC State University Chapel Hill, NC
Bachelor of Science in Biomedical Engineering - GPA: 3.65/4.00 May 2024

EXPERIENCE

Ford Motor Company Dearborn, MI (Hybrid)
Incoming AI/ML Intern May 2025 – August 2025

- Selected for a 10-week summer internship on the AI/ML team within Ford's Global Data Insights and Analytics branch

RESEARCH

Choroidal Analysis and Research (CAR) Lab Pittsburgh, PA
Research Assistant February 2025 - Present

- Working in a four-person team to develop interpretable deep learning methods for retinal image analysis; targeting submission to NeurIPS (A* conference)
- Applied a Canny edge detector and custom segmentation methods to estimate foveal thickness
- Developed vanilla saliency maps for interpretable fovea localization from B-scan OCT images

Computational Biophotonics Lab Chapel Hill, NC
Research for Academic Credit August 2023 – May 2024
Research Assistant (Paid Internship) June 2023 – July 2023

- Integrated Keypoint MoSeq, a machine learning tool for behavioral annotation, into the lab's data analysis pipeline, enabling quantitative analysis of mouse behavior both spatially and temporally. Previously manually counted behaviors are now automatically labeled, revealing differences between experimental conditions
- Developed MATLAB Guided User Interface, allowing users to create analysis boundaries within videos, enabling lab members to create a customized analysis of mice behavior depending on the experiment type
- Acknowledged in the preprint *Social threat alters the behavioral structure of social motivation and reshapes functional brain connectivity* (bioRxiv) for assistance with initial Keypoint MoSeq analysis

Rodriguez Romaguera Lab – Neuroscience Lab Chapel Hill, NC
Volunteer Research Assistant October 2022 – May 2024

- Analyzed and quantified mice keypoint and pupil size data using DeepLabCut's neural network framework with MATLAB and Python

SKILLS

Programming Languages: Python, MATLAB, SQL, HTML/CSS, JavaScript, C++ (Arduino), Java
Machine Learning Skills: Neural Networks, Ensemble Methods (XGBoost, Bootstrap Aggregation), Decision Trees, Random Forest, SVM, Clustering Techniques (K-Means, DBSCAN, Hierarchical), Dimensionality Reduction (PCA, t-SNE)
Software: PyTorch, Scikit-learn, Apache Spark, Google Cloud Dataproc, PostgreSQL, Neo4j, React, Matplotlib, Seaborn
Languages: English (Native), French (Intermediate), Filipino (Intermediate)