Oscar J. Escobar

linkedin.com/in/oscar-j-escobar | https://oescoba2.github.io | https://github.com/oescoba2/MyWork

SKILLS

- Skills
  - Deep Learning & Machine Learning
  - Natural Language Processing
  - Deep Reinforcement Learning
  - Optimal Control & Optimization
  - Fourier Analysis & Computational Linear Algebra
  - Bayesian Statistics & Probability Theory
  - Time Series Analysis & Hidden Markov Models
  - Data Assimilation, PDEs, ODEs
- Coding/Software:
  - Expert: Python, Git/GitHub, Unix Shell/Bash
  - Proficient: SciKit Learn, PyTorch & Keras, Gymnasium, CVXPY, Pandas, SQL
  - Experience with: PySpark, RLlib, Oracle, RStudio, Hadoop, Excel & Power BI, C++

PROFESSIONAL EXPERIENCE

Machine Learning Intern Developer — **June 2024 — Aug 2024**
Wells Fargo—Advanced Analytics & Solutions Team — *Minneapolis, MN*
- Crafted NLP text classification model that achieved 77% cross-validated accuracy on high-error-prone data
- Leveraged NLP and statistical analysis to perform feature engineering and presented NLP results and findings to team
- Wrote an executive summary detailing overall team results, findings, and suggestions presented to upper management

Machine Learning & Data Science Student Engineer — **April 2023 — April 2024**
Family Search—Automated Content Extraction Team — *Lehi, UT*
- Performed data analysis on ML model output using self-made Python script that compared over 100 records at a time
- Identified model improvement areas that led to an increase in correct predictions of 20-30% using Python script
- Spearheaded efforts and meetings with a team of 3 data labelers to create training data and define project benchmarks

RESEARCH

Research Assistant — **Sept 2024 — Present**
BYU Mathematics Department — *Provo, UT*
- Optimize wildfire modeling equations using the Fourier Basis and computational linear algebra
- Craft techniques to employ the Fast Fourier Transform algorithm

Subteam Lead & Analyst — **Sept 2021 — Aug 2023**
BYU Rocketry Club—Hybrid Rocket Research Team — *Provo, UT*
- Published critical design review and research in *Digital Commons Utah State University*
- Crafted a Python script modeling 3 different axisymmetric nozzles incorporating Computational Fluid Dynamics

PROJECTS

Breast Cancer Modeling & Optimal Dosage — **Sept 2024 — April 2025**
- Modeled Invasive Ductal Carcinoma treatment that met the American Cancer Society timelines of chemotherapy
- Applied optimal control theory to derive continuous AC treatment dosage

Deep Reinforcement Learning — **Dec 2025 — Present**
- Implemented code and theory of DQN, DDQN, and Dueling Architecture for Atari game play using CNNs and images
- Developing and coding VPG and Open AI's PPO mathematical theory and algorithm for Humanoid Robotic Walker

EDUCATION

Bachelor of Science: Applied and Computational Mathematics — **Dec 2025**
Brigham Young University (Major GPA 3.3) — *Provo, UT*
- 2023-2024 Math Class President; BYU SIAM Chapter Vice-president; AI & Data-Science Club Member
- Minor/Concentration: Machine Learning
- Related coursework:
  - Mathematics of Deep Learning
  - Data Assimilation
  - Modeling with Dynamics & Data
  - NLP