MH

MICHAEL W. HOPWOOD

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OVERVIEW

- Over 5 years of experience in applied and research **machine learning (ML)** roles, on both solo and team projects
- Released two **open-source** python packages
- Over 15 published journal and conference papers; 3+ oral presentations (speech and panels) given at different conferences (namely, INFORMS)

EXPERIENCE

AMAZON   Aug.2022 – Nov.2022
Data Scientist Intern

- Designing & training novel graph neural network models with goal of reducing the amount of abuse on amazon.com
- Releasing internal package for training and productionizing customized graph neural networks

MICROSOFT   May.2022 – Aug.2022
Data Scientist Intern

- Designed and productionized ML models trained using custom loss functions for Bing search optimization, specifically focused on optimizing rendered page layout of search result
- Model results impact millions of people daily and achieved 2-3% revenue improvements

TESLA   Jan.2022 – May.2022
Data Scientist Intern

- Designed ML models for *time series prediction* of energy charge demand for supercharger sites across the world
- Models achieved over 20% better performance than previous production models, translating to *millions of dollars saved* for the company in its infrastructure planning efforts

SANDIA NATIONAL LABORATORIES   Aug.2020 – Jan.2022
Research & Development Intern

- Answered failure classification tasks via *customized deep learning*, physics-based simulations, and NLP; CICD GitHub project management setup and maintenance
- Published papers, gave conference presentations, and released an open-source python package

DATA SCIENCE DEPARTMENT, UCF   Aug.2020 – Jan.2022
Graduate Research Assistant

- Designed *graph neural networks* for applications on social networks, power systems, and quantum mechanics; Advised undergraduate statistics & computer science students on data science projects
- Published papers and gave conference presentations

FLORIDA SOLAR ENERGY CENTER   Mar.2018 – Jul.2020
Undergraduate Research Assistant

- Utilized ML to detect and classify failures in solar fields; held quarterly Department of Energy stakeholder meetings
- *Data engineering* tasks to securely channel data across multiple networks without any loss of data

OSIsoft, LLC   May.2018 – Aug.2018
Academic Intern

- Generated python API which interfaced to a proprietary archive with a *.NET backbone*
- Ensured the health of a *real-time data management* infrastructure by monitoring the flow of data across platforms

MATERIAL ENGINEERING DEPARTMENT, UCF   Oct.2017 – Mar.2018
Undergraduate Research Assistant

- Studied the effects of modular defects on solar cells using support vector machines; accumulated and archived all failures discovered in solar cells to date

MH

PHYSICS DEPARTMENT, UCF   Aug.2017 – Dec.2017
Physics Teaching Assistant
- *Prepared and taught lectures* to 90+ students; held office hours and exam reviews

STARTUP EXPERIENCE

SAPIEN TECHNOLOGIES, LLC   Sep.2020 – Mar.2021
ML Engineer
- Productionized *Bayesian ML* for economic market trend analysis
- Developed a live algo-trading bot which traded investor capital

REVOLUTION MEDICINE   Nov.2020 – Dec.2020
Data Scientist
- Developed *ML assistant to aid doctors* with deducing best pharmaceutical intervention for a patient given genome and demographic using peer-review journal papers
- Product is being rolled out alongside the startup's hardware product

QUIRK TECHNOLOGIES, LLC   Feb.2019 – Mar.2020
Engineer Intern
- Designed 3D models for a manufacture-grade point-of-sales product
- Added new features to *business analytics* pipeline to provide growth tactics for businesses

EDUCATION

2020-2024	**DATA SCIENCE (Ph.D.)**		**University of Central Florida**
	Department of Data Science and Statistics	GPA: 3.85/4.0	
	Dec 2021 - Masters comprehensive exam passed		
2020	**MECHANICAL ENGINEERING (B.S.)**		**University of Central Florida**
	Burnett Honors College Mathematics Minor	GPA: 3.65/4.0	

TECHNICAL SKILLS

Proficient	Python, SQL, C#, Azure ML, AWS
Basic	R, SAS, Matlab, GCP, MS Power BI, C
Machine Learning	PyTorch & Tensorflow, deep tree models, graph neural networks, ensembles, active learning, hyperparameter tuning, one class learning
Data Engineering	Data integrity, data processing, pragmatic statistics reports
Software Development	CI/CD pipelines, unit tests, git

PRESTIGIOUS AWARDS

- **OUC ML Competition, 2021** runner up award for temporal energy modeling against other teams at UCF
- **Best Student Presentation Award** at PVSC47, an international conference, in "Solar Resource for PV and Forecasting"
- Honorable mention in international Mathematical Contest in Modeling 2020
- UCF's Gold Pegasus scholarship, 2016