ZACHARY (ZACK) HORTON

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EDUCATION

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, SLOAN SCHOOL OF MANAGEMENT Cambridge, MA

Candidate for Master of Business Analytics, Operations Research Center, August 2024, GPA 5.00/5.00 2023 - Present

- Coursework: Machine Learning, Optimization, Deep Learning, Product Analytics, and Software Systems for Data Science
- Deep Learning: Using LSTMs to forecast S&P 500 with a Transformer Encoder for slot-filling and chatbot (Python)
- Real-time Analytics: Applying machine and reinforcement learning for optimal rideshare decision-making (Python)
- Machine Learning Project: Improving K-Means Clustering using Mixed-Integer Optimization (Julia)
- Marketing Analytics: Uncovering causal drivers of conversion for freemium platform customers with machine learning (R)

NORTH CAROLINA STATE UNIVERSITY Raleigh, NC

Bachelor of Science in Industrial & Systems Engineering, summa cum laude, GPA 4.00/4.00 2019 - 2023

- Honors: Health Systems Engineering Certificate, Scholars Program, 1st Place Spring Senior Design Competition, President of ASQ Student Branch, Engineering Ambassador, Class of 2023 Student Representative for NC State Engineering Foundation
- Undergraduate Research: Applied Markov chains and linear models to understand progression of diabetic retinopathy; created user-interface for simulation and optimization library [INFORMS Journal on Computing 35(2):495-508] (Python)
- Member of North Carolina State Club Baseball Team for 3 years

TECHNICAL SKILLS

- Programming: SQL | Python (Pandas, NumPy, Scikit-Learn, TensorFlow) | R | Julia | SAS | Object Oriented Programming
- Software: Databricks | Spark | Salesforce | Tableau | PowerBI | Git | Streamlit
- Certificates: AWS Cloud Practitioner (in-progress) | Cognitir Advanced SQL | Cognitir Intro to SQL

EXPERIENCE

MIT SLOAN | THERMO FISHER SCIENTIFIC Cambridge, MA

Data Science Intern, Capstone Project Spring 2024

- Forecasting demand and new sales wins through machine learning methods, using historical CPQ and Salesforce data

MIT SLOAN | NATIONAL INSURANCE CRIME BUREAU Cambridge, MA

Analytics Lab Team Member Fall 2023

- Engineered machine learning models to predict fraudulent claims and identify high-fraud events from 127 tropical storms, primary goal to enhance workload forecasting and reduce $200K in annual investigative expenses (Julia, Python, R)
- Examined 690,000 fraudulent claims spanning 18 years to discern distinguishing factors of storm-related fraud (Tableau)
- Collaborated with senior data scientists to realign project goals and presented final model with an AUC of 0.83 to team

CORNING INCORPORATED Charlotte, NC

Manufacturing Data Analytics Intern 2022 - 2023

- Automated processing for monthly sales data from 2018 to increase velocity and availability, leveraging natural language processing with Meta's LLM (BART) to analyze 7.3 million rows, adding customer-level granularity to analytics (Python)
- Generated 83 process quality metrics utilizing a convolutional neural network computer vision model in Databricks, earning finalist recognition for the Manufacturing Leadership Council: Engineering & Production Technology award (Python, SQL)
- Showcased project outcomes and strategic impact to CDIO and senior IT leaders across Corning's 5 major business units

UNC REX HOSPITAL Raleigh, NC

Spring Senior Design Project Team Member Spring 2023

- Accomplished goal of decreasing daily backlog of surgical trays from 600 to 75 by developing an optimized scheduling model; reduced required FTEs from 15 to 10 and weekly hours from 584 to 405 compared to previous schedule (R)
- Presented findings, experiences, and future recommendations to senior clinicians, nurses, and hospital managers (Tableau)

DUKE HEALTH Durham, NC

Fall Senior Design Project Team Member Fall 2022

- Developed KPIs focusing on room utilization, cancellation frequency, and scheduling patterns to drive average room utilization up from 30% to 85% while upholding a high quality of care (Python, R)
- Recommended 3-phase approach to clinical leadership to meet utilization goal: prioritized on-call patient list for cancellations, optimized scheduling of clinical staff, and improved patient intake procedure (Python, R, Tableau)

ADDITIONAL INFORMATION

- Interests: lifelong baseball player and skier; drafting recipe book for young adults and new cooks