HAYDEN RATLIFF

hratliff@mit.edu | 206.678.7504 | linkedin.com/in/haydenratliff

EDUCATION

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, SLOAN SCHOOL OF MANAGEMENT Cambridge, MA
Candidate for Master of Business Analytics, Operations Research Center, August 2024 2023 - Present
- GPA: 5.0/5.0; Dean's Fellowship (academic scholarship)
- Computer Vision Project: Created image-based navigation tool for complex building, utilizing fine-tuned ResNet-18 (Python)
- Optimization Project: Designed potential Boston bus routes, maximizing ridership and minimizing emissions (Julia, R)
- Coursework: Deep Learning, Computer Vision, Machine Learning, Optimization Methods
- Activities: Sloan AI & ML Club, Leadership Now Project, MIT Club Ultimate Frisbee

UNIVERSITY OF VIRGINIA Charlottesville, VA
B.S. in Systems Engineering with Highest Distinction, B.A. in Government, Minor in Computer Science 2019 - 2023
- Jefferson Scholarship: Full-tuition academic and leadership scholarship
- Other Awards: Lawn Resident (senior leadership honor), Raven Honor Society, Tau Beta Pi
- Machine Learning Project: Trained RNN to predict COVID-19 deaths in Virginia (Python)
- Coursework: Software Development, Algorithms, Communicating with Data, Decision Models, Statistical Models, Probability
- Leadership: President/Co-Founder of Students for Equity and Reform in Virginia; Project Leader for 180 Degrees Consulting

TECHNICAL SKILLS

- Python (PyTorch, TensorFlow, scikit-learn, pandas), R (ggplot, Plotly, Shiny), Julia (JuMP, Gurobi), SQL, Cypher, C++, Git
- Parallel computing, transfer learning (fine-tuning, RAG), supervised and unsupervised learning, optimization modeling

EXPERIENCE

PFIZER | MIT SLOAN Cambridge, MA
Machine Learning Engineer Intern, MIT Capstone Project 2024 - Present
- Leading development of NLP-based document classification tool automating knowledge transfer between R&D and manufacturing teams, presenting results biweekly to key stakeholders (Python, Cypher)
- Implementing tool in AWS using ETL script, parallel processing, Knowledge Graph database, and human feedback system
- Building GenAI chatbot with RAG to synthesize Knowledge Graph database
- Delivering projected savings of $5.3M/year by reducing manual work 90% for 1K[+] users

MIT OPERATIONS RESEARCH CENTER Cambridge, MA
Research Assistant for Professor Dimitris Bertsimas 2023 - 2024
- Designed and delivered healthcare quality measurement system using K-Means clustering and decision trees (Python, Julia)
- Leveraged parallelized cloud computing to train models on 19M[+] health insurance claims, presenting weekly to research team

LINEAGE LOGISTICS | MIT SLOAN Cambridge, MA
Analytics Lab Project, Predicting New Customer Revenue Fall 2023
- Improved revenue prediction accuracy by 40% using XGBoost, Random Forest, and customer segmentation models (Python)
- Analyzed 1.1M[+] orders to calculate revenue seasonality and presented growth strategies to Lineage leaders

UNIVERSITY OF VIRGINIA Charlottesville, VA
Systems Engineering Capstone Project, UVA Cancer Center 2022 - 2023
- Developed strategies to increase treatment capacity by 15%; presented recommendations to hospital's Data Science team (R)
- Discovered process inefficiencies by analyzing 70K[+] drug infusions and observing cancer treatments
- Received Best Paper Award for co-authored publication: "Optimizing Outpatient Cancer Infusion Center Throughput Using a Systems-Based Approach," presented at *Systems and Information Engineering Design Symposium* (2023)

UNIVERSITY OF WASHINGTON Seattle, WA
Research Assistant Intern, Urban Freight Lab Summer 2021
- Evaluated delivery van GPS tracking data, calculated drive time statistics, and visualized routes for urban parking study (R)
- Acknowledged contributor for publication: "Providing curb availability information to delivery drivers reduces cruising for parking," *Scientific Reports* (2022)

ADDITIONAL INFORMATION

- Habitat for Humanity: Led creation of Census tool visualizing housing inequality in Charlottesville, VA (Python)
- Hiking: Traversed the Haute Route from France to Switzerland