Martin Thomas Durkin

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EDUCATION

University of Rochester **Rochester, NY**

M.S. in Data Science *Class of Fall 2022*

GPA: 3.79/4.0

Coursework: Computational Statistics, Data Mining, Database Systems, Tools for Data Science, Deep Learning, Introduction to Statistical Machine Learning, Predictive Analytics using Python,

Rensselaer Polytechnic Institute **Troy, NY**

B.S. in Computer Science *Class of 2021*

GPA: 3.54/4.0

Coursework: Application Programming using Java, Computer Organization, Data Structures, Introduction to Algorithms, Large Scale Programming, Network Programming, Open Source Software, Operating Systems

SKILLS

Programming Languages: Python (PyTorch, Pandas, NumPy, Matplotlib, Seaborn, SciKit-Learn), Bash, C, C++, C#, Java, JavaScript, R, SAS, SQL, Visual Basic

Web Development: CSS, HTML, MongoDB, .NET Framework, Node.js, PostgreSQL, Vue.js

Other: Linux Ubuntu, Git, Jira, Jupyter Notebook

WORK EXPERIENCE

Harris School Solutions

Research and Development Intern **(January 2020 – October 2021)**

- Modernizing the BOCES module from the legacy WinCap application, which manages contracts, shared programs, and services used by school districts in order to provide an improved user experience
- Implemented the entire Actual Use Bill Schedule financial management module, using Blazor, C#, and Harris' Cheyenne Framework, allowing clients to issue, process, and post bills
- Actively participated in code reviews and communicated with QA to accelerate the release of new features to beta users

RELEVANT PROJECTS

NASA Capstone Researcher **Fall 2022**

- Worked in a team of students alongside experts from NASA and Coral Vita to build a machine learning pipeline using Python that is able to determine coral presence and bleaching levels in order to assist large-scale coral farming
- Employed data from two NASA satellites that was spatially and temporally aligned with coral databases resulting in the ability detect coral at a specific location and date with an overall accuracy of 91 percent
- Dataset consisted of 31 LiDAR features plus an additional 21 features were engineered to further enhance the model's capability of correctly identifying moderate/severely bleached coral

Classification of Cancer Discussion Posts **Fall 2022**

- A comparative study of deep learning models to correctly identify the cancer a patient has, creating a more streamlined process when making a post on the Cancer Survivors Network website
- Scraped data using Beautiful Soup resulting in over 100,000 total posts and 13 unique classes
- Used PyTorch to create and train multiple deep learning models and determined that a stacked model consisting of a Bi-LSTM and transformer encoder provided the best results at nearly 71 percent

Trending Research Topics **Fall 2021**

- Utilized Dimensions.ai to construct a dataset consisting of over 51,000 grants from 131 R1 universities in order to compare trends in Computer Science research to those noted on CSRankings.org by applying Latent Dirichlet Allocation and BERT topic modeling
- Data was cleaned using numerous NLP techniques in order for the models create distinctive and identifiable topics
- Additional models were created for only the University of Rochester, seeing a shift in research towards lasers, cancer treatment, and psychology