

Christopher E. Mertin

Data Scientist

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EDUCATION

M.Sc. Computing: Data Track
May 2017: University of Utah

B.Sc. Physics
May 2015: Florida State University

B.Sc. Applied Mathematics
May 2015: Florida State University

Optimizing Opening of a New Hospital (Contracted Work)

July 2017: University of Utah Health Sciences

- Utilized local hospital patient information in order to determine which clinicians should be hired in order to optimize patient retention and increase profits at a newly opening hospital. Produced interactive visualizations, allowing hiring managers to make informed decisions.

Graduate Research Assistant

August 2015 - May 2017: University of Utah

- Developed and implemented a new form of neural networks which decreased the learning rate from quadratic to linear time while also decreasing the storage from quadratic to linear, with minimal loss in accuracy.

Nuclear Physics Researcher

May 2012 - July 2015: John D. Fox Superconducting Linear Accelerator

- Utilized statistical analysis techniques, theoretical calculations, linear regression, Gaussian Models, and other machine learning algorithms in order to correctly identify states in nuclei to better understand stellar nucleosynthesis.

WORK EXPERIENCE

SKILLS

Languages:

- Python
- C++
- SQL
- R
- D3.js/JavaScript
- HTML5/CSS3

Methods:

- OpenMP
- MPI
- Amazon Web Services (AWS)
- Linux
- MapReduce/Hadoop

Tooling:

- NumPy
- SciPy
- Keras
- TensorFlow
- Pandas
- Scikit-Learn

Optimizing Bank Marketing Strategy

- Focused the banks target audience using customer banking information to determine customers likely to sign up for a term deposit, thereby maximizing the bank's return of investment for their marketing campaign
- Utilized statistics, deep learning, Support Vector Machines (SVMs), and Gaussian Mixture Models

Detailed Business Analysis and Forecasting

- Modeled and forecasted a business' sales for individual stores based on historical sales
- Determined the most important factors for driving daily sales
- Used random forests, statistical analysis, and neural networks

Build Movie Recommendation System

- Created collaborative filtering/recommendation systems based on user movie ratings using two different methods
- MapReduce/Hadoop with custom distance metric between user ratings to determine similar movies
- Neural Network with latent factors based on user ratings to predict how a user would rate a certain movie

Protein Classification

- Implemented state of the art approaches and new untested methods to classify proteins based on their structure
- Used Decision Trees, One vs All Support Vector Machines (SVMs), and Convolutional Neural Networks

SELECTED PROJECTS