William Andrew Cruse

andrew.wcruse@gmail.com | 919.628.8050 | 938 Bugshop Road, Princeton, NC 27569

EXPERIENCE

UNC GREENSBORO | Undergraduate Researcher
Aug 2019 – May 2021 | Greensboro, NC

- Designed experiments to observe accuracy of popular time series classification metrics based on variance on each series.
- Developed, tested time series classification models based on topological data analysis techniques using Python.
- Cleaned data sets collected from UCR Time Series Archive and transformed/normalized data sets to test classification metrics.
- Compared results by uploading data to MySQL database and created spreadsheets using SQL queries in Python.
- Built visualizations of results data and aided research team in preparing papers and presentations for publication at various conferences.
- Maintained responsibilities by participating in weekly Agile sprints.
- Advised a team of undergraduate physics researchers on geometric based data analysis, prediction, and classification techniques in Python and Matlab.

PROJECTS

PYTHON STOCK ANALYSIS

- Utilized object oriented Python class to pull, analyze, and predict trends in stock market time series.
- Implemented neural network model using Python's Scikit-Learn and Keras libraries to predict and analyze trends and statistics.
- Wrote statistical analysis methods in Python to observe and summarize trends.
- Visualized time series data by writing to MySQL database and importing data to Power BI dashboard.

NAKAMA SCOUTER

- Coordinated a team of student developers to create a entertainment recommendation program in Java.
- Extracted and loaded JSON data files retrieved from Google's Geocoding API and various entertainment API to MySQL user database.
- Compared and analyzed user data to create media recommendation system.
- Orchestrated project by managing GitHub pull request, hosting weekly Agile sprints.
- Utilized Reddit and Twitter API to web-scrape for keywords and make media recommendations based on location.

INSTAGRAM DATABASE CLONE

- Designed MySQL Instagram database clone with schema diagram to store and analyze Instagram data.
- Wrote SQL search queries and joins to solve potential business issues such as determining potential bot accounts.
- Scripted VBA connection to MySQL database to write data to Excel for analysis.

EDUCATION

UNC GREENSBORO
Bachelor of Science in Mathematics
minor in Computer Science
Graduated May 2021 | Greensboro, NC

SKILLS

PROGRAMMING
Python
Java
SQL
Matlab
Visual Basic (VBA)
JavaScript
HTML
CSS

TECHNOLOGY
Git/GitHub
Jupyter Notebook
Scikit-Learn
Excel
PowerPoint
MySQL
Power BI

LINKS

Portfolio: **Andy Cruse**
LinkedIn: **Andy Cruse**
Research: **A Hybrid Metric...**

COURSEWORK

Statistics/Probability Theory
Topological Data Analysis
Advanced Data Structures
Linear/Abstract Algebra
Software Engineering
Calculus/Real Analysis
Numerical Analysis

GROUPS

Association for Computing Machinery (ACM) - Secretary
UNCG Math Club - Treasurer
InfoSec
Association for Women in Mathematics