Basil Arafat

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Objective

Computer Science graduate skilled in programming, efficient algorithm design, and software development. Proficient in creating robust software solutions. Seeking a software engineering role to leverage technical expertise in designing and developing innovative applications.

Education

University of Richmond **Aug. 2016 – May 2020**
Bachelor of Science in Computer Science, Mathematics with a minor in Physics *Richmond, VA*

Relevant Coursework

- Data Structures
- Differential Equations
- Database Systems
- Artificial Intelligence
- Software Development
- Algorithms
- Number Theory
- Computer Graphics

Experience

Saddle River Day School **August 2021 – July 2023**
Computer Science Instructor *Saddle River, NJ*

- Developed and taught courses in computer science, including advanced programming classes in CSS, HTML, Python, Java, and JavaScript.
- Developed a new course that focuses on introducing students to concepts and algorithms of artificial intelligence and natural language processing.

Christchurch School **August 2020 – June 2021**
Mathematics Teacher *Saluda, VA*

- Developed new curriculum for Algebra 1 and Geometry using the Common Core State Standards (CCSS).
- Implemented various teaching techniques and differentiated instruction.

Department of Computer Science, University of Richmond **May 2018 – February 2019**
Student Research Assistant *Richmond, VA*

- Implemented neural networks as a machine learning approach for the motion planning problem.
- Designed the visualization platform of my algorithm and created an environment for experimentation and testing.

Department of Physics, University of Richmond **January 2018 – May 2019**
Student Research Assistant *Richmond, VA*

- Utilized a Custom Support Vector Machine for Photometric Redshift Estimation in C++.
- Developed a simple user interface to make the application more accessible to the Physics community.

Projects

Spotify Data Analysis App | *Node.js, React, Styled Components* **June 2023**

- Built a personalized Spotify data visualization app using Node.js, React, and Styled Components, enabling users to explore their music trends interactively.
- Merged frontend and backend expertise to create a user-centric app, offering customized insights into listening habits and highlighting strong problem-solving skills.

Movie Sentiment Analysis | *Python, Scikit-learn, Natural Language Toolkit (NLTK)* **May 2020**

- Developed a sentiment analysis model for movie reviews using Support Vector Machine (SVM), accurately categorizing positive and negative sentiments.
- Employed advanced feature extraction and dictionary techniques on textual data to convert sentiments into numerical representations.
- Strategically fine-tuned model performance, excelling across diverse metrics including accuracy, F1-score, and AUROC, spotlighting adeptness in natural language processing and precision-driven machine learning for sentiment analysis.

Technical Skills

Languages: Python, Java, C++, HTML/CSS, JavaScript, Swift, SQL
Developer Tools: VS Code, Eclipse, Git, TensorFlow, Scikit-learn, Pandas
Technologies/Frameworks: Linux, Django, GitHub, JUnit, React, Node.js, SwiftUI