Tyler Bowes

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SKILLS

Python | C++ | Java | C | SQL | PHP | Git | Agile Development | Web Development | jQuery | Object Orientated Design Patterns | Databases | Natural Language Processing | Algorithms | pandas | Project Management | Problem Solving

EDUCATION

Bachelor of Science, Computer Science **GPA: 3.55**
Boise State University, Boise, ID May, 2024

EXPERIENCE

Onsemi (Pixel Optics Intern) : Nampa, ID **May 2023 – December 2023**

- Utilized metric that determines the contrast and sharpness of an image (MTF/SFR) to collect MTF data from captured and simulated images.
- Developed methodology and tool to automate the extraction of MTF/SFR data for image sensor pixel arrays from captured images based on the International Organization for Standardization (ISO) 12233:2023 document, while also providing Onsemi with thoroughly documented Python scripts and descriptive user manual detailing insight to the methodology used by applying ISO 12233.
- Outperformed expectations by achieving accurate extractions of MTF compared to Imatest's MTF results with custom-developed Python scripts, prompting an internship extension.
- Developed scripts to interchangeably transfer RGB color description data into the standardized CIELAB and CIEXYZ color spaces to evaluate and verify color consistency.

Curtis Instruments (Application Engineer Intern) : Livermore, CA **May 2022 – August 2022**

- Developed C++ modules for motor speed-based controller vehicle systems using object-oriented programming.
- Created software utilizing PDO communication between CAN buses that verifies consistent and accurate transmissions within 100ms to meet new safety requirements for the international market.
- Developed forklift class organizing methods that perform specified mechanisms, utilizing grouping solenoids.
- Designed flowcharts and produced unit tests for each program.

PROJECTS

Case Study - Lexi (Design Pattern Implementation) **January 2024 – April 2024**

- Employed various design patterns such as Composite, Strategy, Decorator, Command, Factor Method, Singleton, Chain of Responsibility, Prototype, and Visitor in developing the Lexi text editor.
- Implemented design patterns to address specific architectural challenges while also enhancing modularity, scalability, and maintainability of the system.

Lidar Data Processing (Sponsored by Bastian Solutions) **January 2024 – May 2024**

- Crafted a comprehensive technical project plan document, outlining project scope, requirements, architectural design, milestones, evaluation criteria, testing, etc., for project sponsor review and approval.
- Collaboratively spearheaded the development of an application to automatically generate a robot's hull (visual boundaries) utilizing the robot's front and rear Lidar sensor coordinate data, while also designing and implementing an intuitive user interface, significantly reducing manual efforts and associated errors.

Part-of-Speech Tagging (PYTHON) **January 2023 – February 2023**

- Demonstrated above 90% part-of-speech sentence accuracy utilizing a greedy decoder from managing training data and creating transition and emission probability methods to test new data.
- Maintained readable code with nicely formatted markdown cells and comments inside a Jupiter Notebook.

Bioinformatics DNA Sequencing (JAVA) **April 2022 – May 2022**

- Formed a BTree data structure with the DNA sequences from the NCBI GenBank database.
- Parsed a DNA sequence creating subsequences of dynamic lengths to store into nodes inside the BTree.
- Implemented search algorithm, utilizing a cache for performance enhancements, to determine the frequency of subsequences, evaluating whether specific subsequences have more occurrences in a DNA sequence.