Al Timofeyev

https://altimofeyev.github.io/portfolio/#/contact · https://altimofeyev.github.io/portfolio/#/contact
al-timofeyev-235542129 | https://altimofeyev.github.io/portfolio/ | AlTimofeyev

Skills

Languages C, C++, Java, Python, SQL, JavaScript, HTML, CSS, Shell Scripting, Markdown, LaTeX
Tools & Frameworks Git, GitHub, React, NumPy, Doxygen, Unit Testing, JSON, Multithreading, Multiprocessing
Environments VSCode, IntelliJ, CLion, PyCharm, Android Studio, CLI, Windows, Linux, MacOS
Process Agile, Scrum

Open Source Contributions

OpenStreetMap

Project-OSRM (Open Source Routing Machine - C++ backend)

C++, Git, GitHub

Mar. 2023 - Apr. 2023

- Noticed a bug that appeared during the build process and added C++ preprocessor guards where the bug was occurring.
- Opened a PR with the suggested changes, got it reviewed and changes were added to the main project.

Technical Projects

Python Palette Extractor (PyPalEx)

GitHub Link · *PyPI Link*

Python, Git, GitHub, Doxygen, CI/CD

Feb. 2022 - Apr. 2023

- Developed a Python package to process images and extract color palettes.
- Utilized Pillow, NumPy, Multiprocessing and JSON libraries to process large amounts of image data and improve performance, reducing the execution time of package from 1 minute down to 5 seconds.
- Analyzed the extracted image data and applied K-Means machine learning algorithm to assist in processing and organizing the data into appealing and usable color palettes.
- Employed CI/CD practices by automating build and publication processes using GitHub Actions.
- Version control management using Git and GitHub.
- Documented codebase using Doxygen.

Custom Data Structures Library

GitHub Link

C++, Git, GitHub, Doxygen

Dec. 2020 – Nov. 2021

- Assembled a templated C++ library of data structures that accept any primitive data type or custom user-defined object.
- Utilized Git and GitHub as the version control management system and documented codebase using Doxygen.

Optimization Algorithm Visualizer

GitHub Link

Java, Processing, Git, GitHub

Jun. 2019 – Oct. 2021

- Built Java desktop application for visualizing optimization algorithms using Processing.
- Implemented a Java library of optimization algorithms: Genetic Algorithm, Particle Swarm, Firefly Algorithm and Differential Evolution.
- Version control management using Git and GitHub.

Benchmark Function Optimization

GitHub Link

C++, GitHub, Doxygen, LaTeX

Jun. 2019 – Oct. 2021

- Built C++ application to utilize eight optimization algorithms that optimized a set of 18 benchmark functions.
- Utilized GitHub, Doxygen and OOP to make code maintainable and reusable.

Interactive Pattern Discovery in Multi-Dimensional Data

GitHub Link

C++, GitHub, Agile (Scrum), Machine Learning

Nov. 2018 – Mar. 2019

- Built C++ application to visualize multi-dimensional data and reduce occlusion using machine learning.
- Implemented Genetic Algorithm to determine best combination of multi-dimensional data that reduced occlusion.
- Collaborated in a team of 6, using Agile(Scrum) methodology.

Education

Central Washington University

Ellensburg, WA

Bachelor of Science in Computer Science

Grad. March 2020

- Graduated Cum Laude (GPA: 3.67/4.0)
- Dean's & President's Lists
- Coursework: Data Structures & Algorithms, Software Engineering, UI Design, Database Management, Computer Architecture, Machine Learning

Big Bend Community College

Moses Lake, WA

Associate of Arts & Science

Direct Transfer Agreement on Dec. 2019

- Extensive Coursework in Mathematics and Physics