Jacob Williams

Sr Software Developer Full Stack Solutions

Links

github.com/bayswaterpc linkedin.com/in/jwbayswater

Skills

LANGUAGES

C/C++, Rust, Python JS, TS, CSS, HTML

FRONTEND

React, Redux, Mobx QT, Egui, WASM D3, Plotly, Konva AdobeXD, Figma

BACKEND

Node, Express, NextJs Rocket, Actix, Flask GraphQL, REST Docker, Kubernetes

DEV OPS

Terraform, Pulumi Github Actions Azure Pipelines

CLOUD

AWS, Azure, Oracle
AWS-Certified Cloud Practitioner

DATABASE

MySQL, PostgreSQL MongoDB, Cassandra, Redis

TESTING

Jest, Cypress, Google Test

DESKTOP

UE4, Bevy, Electron AutoCad

OS

Windows, GNU/Linux

ML

Tensorflow, Keras, Pytorch

CITIZENSHIP

US, Canada

Experience

2019-Now Sr Software Developer

Carlson Software, Ottawa

Heritage Crystal Clean, Chicago

E: bayswaterpc@gmail.com

T: (438)-989-7147

Use Rust, C++, Typescript, and React to deliver optimized solutions for resource estimation, mine planning, and digital twin solutions. Developed and Deployed Machine Vision Algorithms for IOT bulk inventory measurement and used React, Node, GraphQL, Oracle DB, Cassandra, Docker, Kubernetes to create associated web portals. Delivered a desktop blasting package with cloud integrations using Electron, React, Typescript, Node, Rest, MongoDB, and Redis.

2015-2017 Jr Project Engineer

Managed a portfolio of projects for the Waste Oil Recycling Facility. Focused on increasing production and retrofitting facilities to new safety standards. Prepared new projects cost estimation and business proposals. Developed python dashboards using pandas and matplotlib for visualizing processing plant production data.

Education

2017-2019 Masters Mining Engineering McGill University, Montreal

Focused on using meta-heuristic, AI, and machine learning to solve problems in mine planning and production optimization. Created discrete optimization tools for robot path planning.

2010-2015 Bachelors Mining Engineering McGill University, Montreal

Completed 20 months of Co-Op positions in various roles such as Metals Market Analyst, Lab Researcher, Ventilation Engineer, Drill and Blasting engineer, and Surveyor.

Publications

2021 Exploring Deep Learning for Dig-Limit Optimization in Open-Pit Mines

Lead-Author, Journal of Natural Resources Research, 30 Investigated how to generate datasets, train, and deploy CNN's to perform GPU accelerated assessment of clustering in Dig Limit Optimizations.

2016 Optimizing Ore-Waste Dig-Limits as Part of Operational Mine Planning Through Genetic Algorithms

Co-Author, Journal of Natural Resources Research, 25

Deployed Genetic Algorithms to maximize the value of dig limits for multi-element multi-destination scenarios given grade control data, equipment constraints, processing, and mining costs.