Kiefer Aland

Full Stack Software Developer

🏠 studentweb.uvic.ca/kaland   ◎ kieferaland   in kieferaland   ✉ kieferaland@gmail.com   ☎ 250-858-4205

Objective

Transitioning into the tech industry with a BSc. in Computer Science, I am seeking a role in Software Development, Data Science, or Machine Learning. I am a passionate worker who loves to build, improve, and gain insight into complex systems. I'm excited to bring my technical expertise in machine learning and creative problem-solving skills to an innovative team, contribute to challenging projects, and drive impactful growth.

Undergraduate Projects

LEMPEL–ZIV–WELCH UNIVERSAL DATA COMPRESSION | C
- A universal, lossless data compression algorithm used by the Unix compression utility.

RUN-LENGTH ENCODING (RLE): LOSSLESS DATA COMPRESSION | C
- Run-Length Encoding/Decoding to condense parts of DNA sequences.

ONLINE ANALYTICAL PROCESSING | Python
- Basic OLAP queries from first principles.

HTML TO CSV DATA EXTRACTION | Python
- A program which converts HTML files into a CSV representation.

SYSTEM SHELL: PROCESS MANAGEMENT AND FILE SYSTEM TRAVERSAL | C
- A simple shell program similar to bash in Unix or command prompt in Windows.

POSIX PTHREAD LIBRARY: THREADS / MUTEXES / CONDITION VARIABLES | C
- A simulation of an automated control system for a single lane bridge.

FAT FILE SYSTEM | C
- Utilities that perform operations on a file system similar to Microsoft's FAT file system.

SIMPLE WEB SERVER | Python
- STREAM socket (TCP) in Python to create a Simple Web Server (SWS).

RELIABLE DATAGRAM PROTOCOL | Python
- DATAGRAM socket (UDP) in Python to create a Reliable Datagram Protocol (RDP) transceiver.

SWS ON RDP (SOR) | Python
- SWS transporting RDP; Connectionless packet delivery with error-correction/multi-threading.

COMPUTER GRAPHICS: RAYTRACER BASED IMAGE RENDERING | C++
- Generates paths through pixels to compute the colors of a scene of virtual objects.

Graduate Level Research Projects

THE MESSENGER BAG | Bluetooth Link, Ubiquitous Computing, Arduino Uno, Capacitive Sensor

THE PHI CHART | Data Physicalization, Linear Regression, ATMEGA2560 Microcontroller

THE HARMONIC GUIDE | Creativity Support Tool, Human Centred Design, Research Gathering

MOBILE WIRELESS AD HOC MESH NETWORK SIMULATION | C++, Ns3

DEEP NEURAL NETWORKS: CONVOLUTIONAL IMAGE CLASSIFICATION | Python, Keras

A NEUROSCIENTIFIC BASIS FOR TEMPORAL PERCEPTION IN FLOW STATE | Obsidian, Zotero

HYPERBAND - A BANDIT BASED APPROACH TO HYPERPARAMETER OPTIMIZATION | DTOL

Personal Projects (A Couple Favourites)

NUMPY MLP - FEED FORWARD NEURAL NETWORK | Python, Numpy, Matplotlib, MNIST-digits

MEMORY MATCHING GAME IOS APP | SWIFT

Skills

PROGRAMMING

Proficient:
Python, C, Java, SQL
Experienced:
HTML, CSS, JavaScript, C++, WebGL, R
Familiar:
Julia, Go, Rust, Nim, Mojo, Bash

LIBRARIES/FRAMEWORKS

Matplotlib, Tensorflow, Ns3, Brian2, SSH, SFTP

TOOLS/PLATFORMS
Git, MATLAB, Spyder, Vim, Unity, Blender, Arduino, STM, Fusion360

Education

UNIVERSITY OF VICTORIA
BSc Computer Science
Sept 2018 - May 2023

Courses

Artificial Intelligence
Machine Learning
Online Machine Learning
P2P Networking
Creativity Support Tools
Computer Graphics
Quantum Computing
Cognitive Augmentation
Numerical Analysis
Algorithms & Data Structures

Interests

COMPUTATIONAL NEURO-SCIENCE

DATA VISUALIZATION

SCIENTIFIC SIMULATION

HUMAN COMPUTER INTERACTION

COGNITIVE SCIENCE

MECHATRONICS / ROBOTICS

ART / MUSIC