DWRR

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github.com/dwrrehman

dwrrehman.github.io

LANGUAGE PROFICIENCIES

- **C** ..... 8 years
- **C++** ..... 5 years
- **JS** ..... 4 years
- **Python** ..... 3 years

– See page 5 for full list –

SOFTWARE PROFICIENCIES

- **C Standard Library**
- **C++ STL**
- **LLVM**
- **LLDB**
- **Xcode**
- **OpenGL**
- **Unix shell**

– See page 5 for full list –

DANIEL REHMAN

COMPUTER PROGRAMMER

PROFILE

Computer science researcher and skilled computer programmer. Conducts research in areas of computer science such as AI and discrete mathematics. Skilled at programming in several low-level and high-level languages– particularly C and C++.

EDUCATION

Washington State University, Vancouver, WA
M.S. - Computer Science ..... Jan 2022 – Present

Washington State University, Vancouver, WA
B.S. - Computer Science, Math Minor ..... Aug 2017 – Dec 2020

Clark College, Vancouver, WA
AST2 - Computer Science, GPA: 3.16 ..... Sept 2014 – Aug 2017

iTech Preparatory High School, Vancouver, WA
STEM School, NHS President ..... Sept 2012 – June 2016

WORK EXPERIENCE

Shin Etsu Handotai America, Inc., Vancouver, WA
Web Designer Intern, ... July 6 – Aug 28, 2015
Supervisor: Pat McDonnell

- Developed and innovated network information systems
- Worked with **HTML**, **JS**, **CSS**, **MS Office**, **Lotus Notes**, and, **SharePoint**

Bonneville Power Administration, Vancouver, WA
Program Intern ..... July 5 – Aug 29, 2014
Apprenticeships in Science and Engineering (ASE)
Engineering Project Management
Mentor: Mr. Amit Sinha

- Solved technical problems in Transmission Project Management and Engineering and Technical Services
- Worked with **MS Office**, **SharePoint** and **Windows**

RESEARCH EXPERIENCE

Graduate-level Research: Machine Learning Application to Machine Drilling
Washington State University, Vancouver, WA ..... Jan 2019 – May 2019
Computer Science Researcher
Supervisor: Scott Wallace (360)-546-9112

- Worked with CS and engineering graduate students and professors on solving technical problems using complex data from drill machines
- Used **Python**, **Anaconda**, **Matplotlib**, **Sci-Kit Learn**, **Pandas**, **NumPy**, and **Git**

Senior Capstone Research Project: Neuroscience Research Platform
Washington State University, Vancouver, WA ..... Sep 2018 – May 2019
Project Lead
Project Sponsor: Izad Khormaee

- Innovated protein simulation algorithm for efficient neuroscience simulation research
- Developed and documented Open Source interdisciplinary real-time software
- Applied platform to AI and systems neuroscience research
- Used **C**, **C++**, **C++ STL**, **Open CL C**, **XML, GraphViz, Python,** and **Git**

Self-Directed Research: Programming Language Research
Researcher ..... Feb 2019 – Present

- Developed a general-purpose programming language focused on runtime efficiency, compile-time evaluation, extensibility, and code readability
- Created novel Universal Call Syntax Resolution (UCSR) algorithm for the language parser to allow for arbitrary user-defined syntax
- Used **C, C++, LLVM C/C++ API, LaTeX,** and **Pages**

INDEPENDENT SOFTWARE PROJECTS

Programmable Command-Line Text Editor

- Ergonomic, customizable, minimalist modal editor with no dependancies
- Full UTF-8, undo/redo tree, multiple buffers, macros, copy/paste and tab support
- Used **C**, **VT100 Terminal**, **UTF-8**, and **Git**

ARM Cortex-M0+ Assembler

- Minimalist, modular ARM assembler with no dependancies
- Compile-time meta-programming, and UF2 file support
- Used **C**, **UCSR**, **PicoSDK**, and **Git**

Optimizing Compiler

- Flexible syntax and CPU target, minimalist and efficient language with no dependancies
- Uses novel UCSR algorithm for front-end and novel register-allocation/ scheduling algorithm for back-end
- Used **C**, **C++**, **UCSR**, **LLDB**, **LVM**, and **Git**

MINOR PROJECTS

- 3D Voxel Multiplayer Game
- 2D Sandbox Block Game
- Speed Typing Test
- Ear Training Program
- AI Chess Program
- “Simple-Forth” Forth Implementation
- “Lis” Lisp Implementation
- Turing Machine Implementation
- Virtual Custom CPU Implementation
- Personal Website

INDEPENDENT HARDWARE PROJECTS

Ultra-Low-Power Battery-less Wrist Watch/Computer

- Solar-powered, wearable, self-programmable watch with FRAM, reed switch input and 6-bit binary LED output
- Used **C**, **MPLAB**, **PIC assembly**, **EasyEDA, CCS, MSP430 assembly, EZ-FET**

Raspberry Pi Pico Programmable Mechanical Keyboard

- Ergonomic, customizable, extensible, ortho-linear 36-key keyboard with 4 OLED displays and text editor C firmware
- Used **C**, **I2C**, **TinyUSB**, **UART**, **QMK**, **PicoSDK**, **EasyEDA,** and **Git**

HONORS • AWARDS • SCHOLARSHIPS

Washington State University Vancouver Campus-wide Talent Show
1st place winner ..... April 2019

Washington State Opportunity Scholarship
Five-year recipient ..... Sept 2016 – May 2020

Bonneville Power Administration Associates Foundation Scholarship
Recipient ..... Aug 2016

Two (2) Clark College Foundation Scholarships
Recipient ..... Aug 2016

iTech iPrize Technological Design Challenge
1st place winner ..... April 2014

iTech Preparatory HS National Honors Society
Two-year President ..... Oct 2013 – May 2015

CONFERENCES

National Student Leadership Conference on Engineering
University of California, Berkeley ..... June 23 – July 2, 2014
Represented iTech Preparatory HS

- Held at UC Berkeley College of Engineering, Boehringer Ingelheim Lab and the Lawrence Berkeley National Laboratory

EXTRACURRICULARS

Self-taught Classical and Jazz Pianist
Playing piano for about 9 years ..... May 2013 – Present

- Self-taught composer and improviser
- Many piano improvisation/composition recordings posted online

Certified Community Emergency Response Team (CERT) Volunteer
Clark County, WA ..... 2016 – Present

HARD SKILLS

LANGUAGES

Low-level	*Mid-level*	*High-level*	*Web*	*Other*
PIC	C	Java	Wasm	Lisp
x86	C++	Swift	HTML	Haskell
ARM	OpenCL C	Go	CSS	LaTeX
MSP430	Rust	Python	JS	BF
	Zig	Bash		MySQL

PROTOCOLS

Low-level	*Mid-level*	*High-level*
I2C	UDP	XML
SPI	TCP	JSON
USB	IP	
JTAG	UTF-8	
SWD		

SOFTWARE

Xcode	LLVM	LLDB	IntelliJ	Eclipse	Vim	Libc	C++ STL	CCS
GLFW	OpenGL	OpenCL	OpenAL	Valgrind	Unix Shell	MySQL DB	SDL	MPLABX
MS Office	Pages	Keynote	Numbers	Pandas	NumPy	Anaconda	Git	AutoCAD

SOFT SKILLS

- Clear and concise communicator of ideas, problems, and solutions
- Works well in group settings, and can maintain leadership roles
- Completes projects in a timely manner, and dedicated to given work
- Adapts well to changing conditions or requirements of a project
- Understands real-world industry and research workflow and how large software projects are managed