



# WALKER HILDEBRAND

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## TECHNICAL STRENGTHS

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Languages	C++ · C# · Bash · Java · Python · SQL · MongoDB · Javascript · Node.js
Tools	MFC · Angular · Express · .NET · UNIX · Git · Visual Studio · OpenGL

## EDUCATION

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University of Waterloo

Bachelor of Computer Science (82% major avg)

*Expected Apr 2022*

*President's Scholarship of Distinction*

## WORK EXPERIENCE

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**Rocscience** | Software Developer

*Jan 2019 - Present*

World leader in providing advanced geotechnical software to civil engineering and mining industries

- Created a CAD module to model the construction of complex 3D embankment loads and conduct time-dependant vertical soil consolidation analysis using **C++**, **MFC** and **OpenGL**
- Developed algorithms to validate, discretize, and analyze the loads with a focus on time efficiency
- Improved accuracy of settlement analysis while connecting the CAD module to the engine
- Redesigned several geometric and mathematical tools with an efficient, **graph theory** based approach

**Payworks** | Software Developer

*May 2018 - Oct 2018*

National provider of cloud-based payroll and workforce management systems

- Deployed the automated testing framework, developing it in **C#** from a preliminary phase into a working product ready to perform smoke, end-to-end, acceptance and regression tests
- Played a decisive role in the design and implementation of the framework's core architecture
- Reinvented the method of interacting with inconsistent grid components throughout the site, immensely reducing the amount of boilerplate code and greatly improving maintainability
- Utilized **advanced design patterns** to abstract and encapsulate the construction of elements

**Sweet Tops Ice Cream** | Freelance Developer

*May 2017 - Aug 2017*

Small business that I approached with a solution to their issues managing 30+ part-time employees

- Developed a **Java** application to assist in payroll, scheduling and employee management
- Implemented automatic pay calculation, schedule distribution, and schedule conflict detection
- Integrated a **relational database** to store employee and schedule data using SQLite3 and JDBC

## PROJECTS

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### 🔗 EasyDocs (DeltaHacks V) (Python, SQL, Django & Javascript)

January 2019

- Developed a web application for general practitioners that generates patient information templates, highlighting important data & potential medical issues
- Designed an intricate **SQL** database to relate medical ailments, treatments, side-effects, conflicting medicines, family histories, as well as HCP, patient and scheduling data
- Implemented risk assessment for medical conditions based on patient data & other risk factors
- Analyzed patient illnesses, treatments & side-effects to warn healthcare providers of potential conflicts

### 🔗 Multiquadris (CS246 Final Project) (C++)

December 2018

- Created a multiplayer, command line version of Tetris, with special actions and varying difficulties
- Designed an extendable, well-structured, program through the use of appropriate **design patterns**
- Received a grade of **105%** for excellent design and the addition of several extra features

### 🔗 LocalizeCS (Bash)

October 2018

- Created a command-line program allowing users to create and sync local versions of remote environments as a solution to the frustrations of completing assignments on UWaterloo's remote servers
- Built Git-inspired functionality to push, pull, sync and "diff" changes between the environments
- Implemented features that allow remote execution of commands and easy connection to the remote
- Shared the program amongst classmates and peers who frequently use it for assignments

### Mini Projects (Assorted Languages)

- 10FasterFingers - Created a Chrome extension that allows users to cheat several typing test websites. Used a javascript OCR library to overcome the anti-cheat system.
- WalkerHildebrand.com - Working on a personal portfolio website using **MEAN stack**
- Spotify Weekly Update - Used **Express** and Spotify's API to continuously update a **MongoDB** database of my listening history, and create a weekly playlist of my most listened to songs
- Ride The Bus - Developed a program in **C#** that simulates a card game. Programmed and analysed different playing strategies and their efficacy

## ACADEMIC & PERSONAL ACHIEVEMENTS

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Third place in University of Manitoba Math Contest

2017

Placed in the top 15% in several national math contests

2014-2017

3 WSD Academic Achievement Awards

2014-2017

Manitoba Provincial Record - 400m Medley Relay

2010-Present

Hobby Bass Guitarist & Multi-Instrumentalist

Intermediate Squash Player

Digital Artist (Geometric & Programmatic Art)