sheldonfrith@hotmail.com
https://sheldonfrith.com

Sheldon Frith – CV

Languages	*Back End*	*Front End*	*Machine Learning*	*Databases*	*Infrastructure*
Typescript	ASP.Net Core	React	PyTorch	MySQL, SQLite	AWS, Digital
C#	MVC	Next.js	SKLearn	Relational	Ocean
Javascript	Nest.js	Styled-	Optuna	Databases	Ubuntu + Nginx
Python	Flask	Components	Pandas		Servers
C++	EF Core		GDAL		
PHP	TypeORM		OsGEO		

Experience

Umny Inc.
Lead Software Developer
May 2021 – Present
- Sole software developer on the team, handle all software development and related tasks from
- Provision and manage all servers, databases and networks (primarily via AWS), competent Linux sysadmin
- Build all Machine Learning models used in software (mostly deep neural networks) from end to end, including data generation, data collection, data processing, feature selection, model/algorithm selection, HPO, validation, testing, serialization and deployment

Details on Software built for Umny Inc:

Geothermal Monitoring and Control System and Web Interface
Allows user to monitor the state and sensor readings in their geothermal system, schedule and send control signals to control the operation of the system, built for Innovia GEO.
- Backend servers communicate with on-site HVAC controller module(s) (which I also programmed) and database

GeoPile Predictive Software
A geothermal system design and performance prediction suite, built for Innovia GEO

C++ end-to-end ML model creation and HPO framework
Comprehensive end-to-end ML model creation software, including custom improved HPO algorithms and meta-learning
- Custom HPO Algorithms and Meta Learning
- Extensions on top of the PyTorch C++ API
- Cross-platform, performant, designed to allow ML training (as opposed to just inference) to happen on low-power edge devices, without user input (Auto ML)

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Ground Temperature Predictor

A public API and web app that uses ML to predict the temperature below ground anywhere on earth, by date and depth, with less than 1 °C error margin in most locations

- Data management and processing of over 1TB of raster files, including heavy use of osgeo/gdal for geographic data fetching

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Soil Conductivity Predictor (Beta)

A public API and web app that uses ML to estimate the Thermal Conductivity of any soil based on its physical properties, which is more accurate than any existing method

Custom ML Dataset Splitting Command Line Utility (Beta)

Creates more challenging data splits, using a smarter algorithm, than traditional methods, leading to more reliable model performance in the real world

Python ML creation and HPO framework

Built on top of the Optuna HPO library to allow easier end-to-end ML model creation and testing, with less human supervision required

UmnySoil (Beta)

A web app for Geotechnical Engineers and soil scientists to simplify some common mathematical tasks

Sharp AR

Lead Software Developer

Sept 2020 – May 2021

- Built a custom Shopify plugin/app to allow easier, more customizable Augmented Reality integration into stores
- Built an embeddable Augmented Reality service (built on Google's model-viewer) which could work in any website

Personal Software Projects:

*I have been creating small software projects since the age of 14 (including whole applications built with excel VB macros, several react-based web apps, many websites, java console applications, etc). A recent example side project of mine is a web app for testing the execution speed of various sorting algorithms comparing C++ Web Assembly to regular JavaScript (***https://sheldonfrith.com/wasm-speed-tester***).*

Front Desk

Construction and General Contracting
Caledon, ON
May 2019 – Aug 2020

- Framing, carpentry, roofing, drywall, insulation, plumbing, electrical, finishing, and more

Fazenda Meats

Cofounder and Owner-Operator
Caledon, Ontario
Apr 2020 – Oct 2020

- Produced grass fed goat meat
- Regenerative rotational grazing, using Holistic Management
- Designed and built unique hands-free bottle-feeding system which is highly portable for a rotational on-pasture grazing situation

Wandering Farm

Cofounder and Owner-Operator
Caledon, Ontario
May 2019 – Oct 2019

- Produced organic vegetables
- Implemented many time-studies comparing various common, but conflicting, paradigms of vegetable production (different weeding techniques, planting techniques, harvesting techniques, etc.)
- Converted a washing machine into a commercial scale salad spinner
- Designed and built low-cost irrigation system

Buffalo Air Express

Equipment Operator, Driver, and Airplane Loader
Hay River, NWT
Sept 2018 – May 2019

- Trained new employees
- Ensured high-value and high-risk cargo (including dangerous goods, human remains, medical samples and emergency medical equipment) was delivered and transported on time without damage

Northern Farm Training Institute

Holistic Management Supervisor
Hay River, NT
May 2016 – Dec 2017

- Supervising and managing employees and volunteers, from various countries
- Managing regenerative livestock and vegetable production operation
- Developing course curriculum and teaching courses on food security, and regenerative agriculture in the far-north
- Writing grant applications and assisting with business planning

Author

Dec 2015 – May 2016

- Self published "Letter to a Vegetarian Nation"
- Contributing author to "Green Meat? Sustaining Eaters, Animals, and the Planet" published by McGill-Queen's University Press

B-C Ranch
Holistic Management Apprentice
Meadow Lake, SK
Jun 2015 – Dec 2015

Driftwood Landscaping
Landscaper
Oct 2014 – Jun 2015

Makaria Farm
Greenhouse Manager
Duncan, BC
May 2014 – Oct 2014

Education

Camosun College, Social Work Program
-   Partial, changed career path

Gaia College
-   Organic Master Gardener and Ecological Landscape Design Certificates

OCAD University, Fine Arts, Sculpture and Installation
-   Partial, changed career path

Wellington Heights Secondary School
-   Grade 12 Diploma, with Honors

Skills

I can tackle almost any part of a software project; however, I am specialized in the following:

-   Deep Learning and Data Science that includes a geographic component and/or is related to geology/soil.
-   Full stack web-app development (with a slight preference for back end) with Typescript, React, SQL/Relational database

As a software developer, I pride myself on my exceptional work ethic. I have a demonstrated history of going above and beyond to achieve project goals and produce the best quality work, and I am happy to provide references from any of the positions I've held to prove that. Additionally I've been told I have excellent communication skills, when working as part of a team.