Zach **Easterbrook**

Full Stack Software Engineer / DevOps Engineer

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Work Experience

Windscribe Ltd.
Toronto ON, Worked Remotely

Senior Software Engineer / Devops Engineer
May 2022 - January 2023

- Worked primarily on many microservices that make up the VPN service Windscribe provides. All of these were written in **Golang**.
- Authored and maintained a program using **Golang** that would generate various URL blocklists for use in DNS applications.
- Worked on the internal provisioner software and resolved various bugs. The provisioner oversaw 500+ VMs located worldwide.
- Became familiar with low-level networking protocols like **DNS**, **Websockets**, **HTTP/2**, **TCP/IP** and read RFC documents about these protocols to guide the implementation of code that had to work with them on the lowest level.
- Worked with a bespoke operating system based on **Ubuntu Linux** and had to understand linux internals including the **initramfs**, the boot procedure, how process management works in the kernel, syscalls, signals, how to use **strace** and profile various programs.

Purolator Digital Lab - Continuation of Shipperbee
Mississauga ON, Worked Remotely

Software Engineer / DevOps Engineer / Embedded Engineer
June 2021 - May 2022

- Worked in the Purolator Digital Lab as part of a research group to bring new projects to fruition using any technologies necessary
- Wrote the entire infrastructure of our flagship app using **Terraform** to create and manage Azure resources
- Wrote all the firmware for a smart mailbox Purolator was developing, had to deal with technologies like **NFC** and protocols like **I2C** and **SPI** to communicate with multiple sensors. All work was done in **C++**
- Worked in multiple languages including **C# 8.0, ASP.NET Core** and **C++**, worked with Azure functions and a lot of Azure cloud technologies, including **Event Grid** and **IoT Central**
- Participated in the hiring process for multiple developers, managed some larger features and delegated user stories.

Shipperbee Inc.
Guelph ON, Worked Remotely

Software Engineer / DevOps Engineer
September 2020 - June 2021

- Worked with a remote team as part of a startup company to help bringing a new product in the logistics / shipping market to fruition. Went from a volume of 100 parcels per day to over 5000 a day in the space of a few months. Integrated with well known Canadian parcel carriers.
- Managed infrastructure of our cloud resources using **Terraform**. Solved scaling problems involving our database as we rapidly grew.
- Wrote Azure pipelines in **YAML** and integrated our repos with **SonarCloud** for **Static Code Analysis**. Managed branch policies and release policies based on the results of this code analysis
- Worked in **C# 8.0, ASP.NET Core**, worked with Azure functions and a lot of Azure cloud technologies
- Was part of an internal standards committee to decide things like API naming schemes, coding guidelines, etc.,
- Participated in the hiring process for multiple developers

Wired Solutions
Windsor, ON, Worked Remotely

Full Stack Software Engineer
May 2020 - September 2020

- Lead a project for the design & implementation of an analysis interface for the statistical research process of Q Methodology, worked with researchers to meet their needs. Responsibilities included prototyping the design with **Axure 9**, Writing stories and assigning them in **Azure DevOps**, Managed the source control for the project using **Git**.
- Statistical processes involved Factor Analysis, Judgemental Factor Rotation (i.e, 'by hand'), the Math.NET Numerics library was used to help in these tasks
- Worked mainly in **C# / ASP.NET Core MVC** and **TypeScript** using the **Angular 8** framework.
- Learned to work with docker and selenium, how to properly write tests (Unit, Integration, UI).

AppNouveau
Windsor, ON

Full Stack Software Engineer
Apr. 2019 - May 2020

- Built new features using **C# / ASP.NET Core MVC** for local businesses. Apps included a Daycare Management System and Tutoring Application
- Designed front-end interfaces using **reactjs** and **TypeScript**. Designed APIs to talk between the front and back
- Designed features for mobile versions of these web applications using **Dart / Flutter** and **react-native**

Sylectus / Omnitracs Canada
Windsor, ON

Full Stack Software Engineer
July 2014 - August 2018

- Maintained legacy systems built using **VBScript** and **Classic ASP**. Was responsible for refactoring several of these systems to modern **C# / ASP.NET**
- Introduced **redis** to the site architecture and reduced load times site wide. Set up **redis sentinel** to add high availability (HA)
- Integrated with a third party API to geocode / reverse geocode geolocation information, I integrated this API with redis and serviced thousands of requests every second.
- Helped migrate 15 production databases from **PervasiveDB** to **MariaDB** with no data loss

University of Windsor
Computer Science Tutor & Teaching Assistant

Windsor, ON

Sept. 2011 - Apr. 2019 (Seasonally)

- Tutored students in all years, held office hours and marked assignments / exams

IBM Canada
Cloud Software Engineering Intern

Markham, ON

May 2012 - Aug. 2013

- Wrote software in **Java** and **Groovy** to deploy and provision operating systems to bare-metal hardware asychronously.
- Wrote scripts in **Perl** to configure the internal network on the rack at boot-time.

Navetz Software
Junior Software Engineer

Windsor, ON

Dec. 2010 - Jan. 2012

- Wrote and maintained applications written in **PHP**, **JavaScript**, and **MySQL**, including an application for the Detroit Red Wings

Education

University Of Windsor
B.S. in Computer Science w/ Co-op (Honors)

Windsor, ON, Canada

April 2020

Technical Skills

Cloud Technologies	Terraform, Azure functions, Azure app configuration, Azure KeyVault, Azure pipelines, Azure APIM (API Management), App Services, Azure Storage Accounts, Postgres for Azure, Redis for Azure, etc., Some exposure to EventGrid
Languages	C#, HTML/CSS/JS, C++, C, Golang, Shell Scripting, Java, Python, Elixir, Erlang, Rust, VBScript, SQL, TypeScript
Frameworks	ASP.NET Core, Angular 8+, ASP.NET WebForms, Flutter, ReactJS, C++ STL
Databases / Document Stores	MySQL, MariaDB, Postgres, MSSQL, Redis, KeyDB, Azure CosmosDB, Informix, DB2, Pervasive, SQLite
Operating Systems	OS X, Windows, Unix, Linux (RHEL / CentOS, Ubuntu, Arch, Gentoo), AIX

Extracurricular Activity

CS Games
Attendee

Montreal, QC

March 2020

- Was chosen as part of 20 students to represent the University of Windsor in this competition, selected for the areas of Security, Networking, and Operating Systems

Various Open Source Projects
Contributor

Various

Sep. 2010 - Present

- Contributed to the BRL-CAD Project, replaced their old custom string implementation with C++ std::string
- Contributed to Mozillas Firefox OS, worked in **C++** and **JavaScript**, work was focused on the alarm clock / timer app
- Solve Problems on leetcode periodically, see `https://leetcode.com/lainiwakura/`
- View Old Personal projects at `http://github.com/LainIwakura`
- I write articles on deobfuscating IOCCC (International Obfuscated C Code Contest) winners. My best article is the one where I deobfuscated and explained the workings of the first IOCCC winner from 1984 which was written for PDP-11 and VAX machines. It includes an interview with the original author. You can read it here: `https://lainsystems.com/posts/exploring-mullender-dot-c/`