Elliott DuCharme

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Education

Dakota State University, The Beacom College of Computer and Cyber Sciences — Madison, SD
B.S. Computer Science, Magna Cum Laude — May 2023

Work Experience

Software Engineer/Web Developer | KBR — June 2023–Present
- Integral member of the FEWS NET team which uses data to assist governments in famine predictions and preparation.
- Rewrote FEWS NET website using **React**, **Next.js**, **TypeScript**, and **Tailwind CSS**.
- Utilize Tailwind to **enhance UI/UX** for mobile users.
- Demonstrates proficiency in **frontend development** and a commitment to leveraging technology for positive societal outcomes.
- Currently working on SWIM, an internal web app for managing employees.

Software Design Student | Daktronics — May 2022–May 2023
- Tested new versions of several software and hardware products for digital signage and helped **resolve impediments** relating to them.
- Gained experience **communicating issues** with members of the appropriate development teams when issues arose.
- Worked on **C#** development team responsible for Orion, a highly anticipated **web app** for **automating** test cases which has been in the works for many years.
- Helped find and **fix bugs** and add new features.

Projects

MemoryMosaic
- My pride and joy and largest personal project, a **free and open source**, **C# Blazor web app** for backing up, storing, and managing a lifetime of memories.
- Has had two major updates and overhauls throughout the years to improve and enhance the project.
- Gained **extensive experience** with **C#**, **HTML**, **CSS**, **JavaScript**, **Blazor**, and **PostgreSQL**.
  - **Taught myself** these technologies within **3–4 weeks**.
  - Quickly learned technical details of different photo and video file formats.
- **Very well-optimized**: your library can scale into the **millions** without any performance issues.
- Importing items is **extremely customizable**, allowing the user to control exactly where each item will end up.

AutoHotkey Scripts
- Large repository of **AutoHotkey** scripts to help **automate** many repetitive daily computer tasks.
- Includes **programmable hardware** like mouse, keyboard, and macro pad, each with dozens of extra buttons and actions.
- I have a need for efficiency in everything I do, and this project has helped me achieve that. I can work far more efficiently with these amazing tools.
- Learned about some of the inner workings of the Windows operating system.

Dish Up
- Final project for Software Engineering class, a **C# Blazor app** that utilizes **PostgreSQL** for creating, storing, managing, and displaying recipes.
- Gained invaluable experience in a **project leadership position**. Delegated tasks, worked on desktop UI, and helped team members get assigned work done.
- Has a **well-thought-out UI/UX** that works well on both desktop and mobile.
- Recipes can easily be shared between users, and the user can create groupings of recipes to stay organized. Contains search feature to easily find recipes.
- Validated functionality of backend classes with **unit tests** and **test-driven development**.

Graphical Photo Organizer
- A **C# WPF** app for organizing folders of photos and videos based on the date each item was taken.
- Very **optimized** and **efficient**: can automatically sort thousands of items in a few minutes.
- Allows users to sort items manually or automatically, giving them more control or saving them time, depending on their needs.
- One goal was to make a **simple app anyone could use**, and the interface reflects that design goal.

Date Taken Extractor
- A **C# library** making it easy to read and write **Date Taken metadata** for photos and videos.
- My first **NuGet package**, with **over 4,000 downloads**.
- Used in MemoryMosaic and Graphical Photo Organizer to greatly help **reduce duplication** of code.

Skills

- Enjoys working with C#, PostgreSQL, React, Next.js, Tailwind CSS, TypeScript, Blazor, Unity, Godot, PHP, C++, Java, and Python.
- Proficient in C#, Blazor, PostgreSQL, MySQL, and Unity.
- Accomplished team leader with a proven track record of effectively leading multiple teams to success.
- Fast learner, passionate about learning new languages and tools.
- Always striving to take on new challenges, technologies, and projects.
- Experienced crafting well-designed UIs for web and desktop.
- Efficient and productive worker, familiar with automation tools.
- Proficient with robotics programming and vision.

Special Involvements

- Lead programmer for FIRST Robotics Competition team — October 2015–March 2020
- Dale Carnegie Teen Leadership and Communication Conference — Spring 2018
- Member of DSU Computer Club and Programming Club — Fall 2020–Spring 2023
- Member of DSU Game Design Club — Fall 2022–Spring 2023