

# Sebastian Czynry

[Sebastian Czynry | eResume \(sebastian-czynry.github.io\)](https://sebastian-czynry.github.io)



<https://github.com/Sebastian-Czynry>



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## Skills

<b>Programming</b>	C, C++, C#, Java, Python, Javascript, Typescript, Matlab
<b>Web &amp; Database</b>	HTML & CSS, Bootstrap, SQL, MS SQL Management Studio, MongoDB, Amazon Web Services, Microsoft Azure, Google Cloud
<b>Frameworks</b>	ASP.NET MVC Core (IIS), RESTful Interfaces, Entity Framework, Identity Framework, Git, AngularJS, React, ExpressJS, PyTorch, SciKit learn, Numpy, Springboot, Langchain, Streamlit, LlamaIndex
<b>Environments</b>	Microsoft Visual Studio, Visual Studio Code, Netbeans, Eclipse, Windows, Linux
<b>Hardware &amp; Digital Systems</b>	Verilog, Intel Quartus Prime for FPGA Development, ModelSim, De1-SoC FPGA board, Keil uVision5, STM32 Nucleo-F446ZE Microcontroller, STM32 Cube IDE

## Education & Interests

### University of Toronto

Bachelor of Applied Science: Computer Engineering

**CGPA: 3.96**

Master of Applied Science: Electrical and Computer Engineering

Expected Completion: Sept. 2026

### Interests

Reconfigurable systems, CAD for reconfigurable systems, FPGAs, CGRAs, front- & back-end web development, collaborative software/hardware projects, large-scale software systems, digital and embedded systems

## Research

### CGRA-ME, University of Toronto

Graduate Research Assistant

Fall 2024 -

Present

- **Research Focus:** Modeling and Exploration of coarse-grained reconfigurable array (CGRA) architectures and algorithms for mapping applications onto them

### "RAAP-CGRA: Placement for CGRAs with Restricted Routing Architectures", Co-author

- **Modeled** three increasingly restrictive CGRA architectures within CGRA-ME's C++ framework
- **Demonstrated** that CGRA mapping algorithms that are made aware of the routability of the architecture can significantly improve application mappability by 50% over algorithms that are indifferent to it
- Accepted to the CGRA4HPC'25 workshop

## Work Experience

### University of Toronto, Digital Systems, Computer Organization - Teaching Assistant

Fall 2024 -

Present

- **Facilitated** lab sessions for second-year computer engineering courses on Digital Systems and Computer Organization, providing hands-on guidance and support to students.
- Graded assignments, midterms, and lab reports, ensuring **timely** and **constructive** feedback to enhance student learning.
- **Collaborated** with other teaching assistants and faculty members in regular meetings to discuss student progress and course improvements.

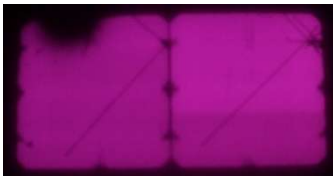


- **Learned** about computer programming (writing software applications in a multitude of programming languages), computer security (how to make websites secure), computer networks (making HTTP requests and handling HTTP responses), and software architecture (designing scalable and responsive software applications).
- **Developed** and managed the front-end of a health care information services provider using Javascript, HTML & CSS, and AngularJS, as well as a back-end using the Java Springboot framework, ColdFusion Web Development Suite, and connected with a Microsoft SQL Server
- **Collaborated** alongside a small team of senior software engineers and business analysts to design and integrate web pages into the MyChart application
- **Improved** usability through intuitive table filters and pagination, PDF viewing, and data load indicators
- **Communicated** progress on software development through daily meetings and Scrums

Design Teams

Blue Sky Solar Racing Team - Array and Electromechanical Sub-Teams

Oct 2021-  
July 2022



**Array: Light curve tracing, Electroluminescent image rating algorithm** (Python). Designed a Python script to analyze and compare the brightness of solar cells. Images of solar cell electroluminescence were analyzed using the Python Image Library and run & tested in Visual Studio Code. The analysis allowed optimize placement of solar cells on a solar car such that the car receives a maximum power input.

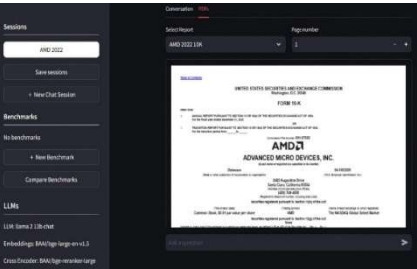
Collaborative Experience

Team Leader, LLM Agent For Shareholder Report Generation, Capstone Project U of T

Sept 2023 -  
April 2024

"A Large Language Model Agent for quick & efficient analysis of shareholder reports"

 [Source Code](#)  [Demo Video](#)



- **Collaborated** with a team of 4 to produce an application that utilizes LLMs (both OSS and API Inference) to chat with shareholder reports.
- **Concluded** that no prompting strategy dominates over any other and each has its own use case. The Re-Ranker retrieval strategy performs almost identically to OpenAI's ADA Embeddings Model®
- Underwent rigorous **Testing** of the LLM Agent accuracy through the comparison of human-generated responses with those of the LLM Agent under different prompting and retrieval strategies.
- **Innovated** current state-of-the-art prompting strategies with our very

own Multi-Stage Prompting.

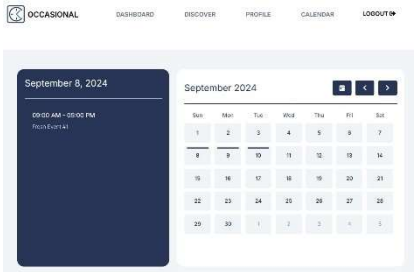
- **Researched** the Natural Language Processing pipeline and incorporated workflow into application.
- **Prepared** meetings by organizing an agenda beforehand, and completed each task for the meetings
- **Coordinated** meetings by following pre-planned agenda, ensuring the participation of all team members, and initiating discussions, through the inquiry of team members' work status

Team Leader, Occasional (Web Application), Software Engineering U of T

Fall 2023

"Web Application for UofT Event discovery"

 [Source Code](#)  [Demo Video](#)  [Website](#)



- **Collaborated** with a team of 6 to produce a responsive web app using Python Flask and MongoDB.
- **Performed** Unit, Performance, Regression, and End-To-End Tests to benchmark the application
- Design was **determined** through structured brainstorming and creating wireframes in Figma
- **Researched** UI/UX design principles and incorporated them into app.
- **Administered** MongoDB Cloud Database for data persistency.
- Implemented web **Security** via Bcrypt for password hashing.