Manuel Stefan Christopher

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Education

University of Waterloo — *Waterloo, Ontario*

Candidate of Bachelor of Mathematics — *Sep 2021 - Apr 2026 (expected)*

Cumulative GPA: 3.9/4.0

Relevant coursework (in progress): Elementary Algorithm Design and Data Abstraction, Linear Algebra 1, Calculus 2

Skills

Languages: JavaScript, Python, HTML/CSS, Java, C, C++

Tools: React, Next.js, Node.js, Firebase, FastAPI, AWS, GCP, MySQL, SQLAlchemy, Flask, Git, REST, Postman, Jupyter, Scikit-learn

Experience

Unlimited App — *Waterloo, Ontario*

Full Stack Web Developer — *May 2021 - Sep 2021*

- Developed a **Next.js**-based web app for a social networking startup to enable digital artists (**Unlimited App**) and professionals (**Karir.io**) to connect by using **Flask, SQLAlchemy, MySQL, Aurora API, AWS**, and **Postman** (for API testing).
- Developed a feature that enables user-driven competition, increasing the number of web visits by **400%** as it accounts for **80%** of the web traffic.
- Enhanced the Comment feature by adding likes and subcomments, increasing the engagement rate between users by **250%**.
- Optimized processing of fetched JSON data by rewriting functions, reducing the runtime by **10%**.

Projects

RemCol | *React, GCP, Node.js, JavaScript, Material UI*

- Built a **React** web app at **Def Hacks Global 2.0** that facilitates real-time collaboration between students and teachers.
- Led a team of 4 in facilitating ideation and building the required specs along with technical PRD.
- Implemented **OCR** for a collaborative whiteboard environment and an instant messaging system for discussions.
- Selected for **Google's COVID-19 Hackathon Fund**, allowing the team to receive up to **$5,000 cloud credits** and guidance from Google developers.

Favorite Pokemon | *React, Node.js, FastAPI, SQLAlchemy, Bulma*

- Created a full-stack platform that enables users to search and select their favorite pokemons with **React**.
- Wrote an API that fetches pokemons and their characteristics from **PokeAPI** and retrieve user information from the backend.
- Optimized the fetching process by employing a search bar and displaying 20 pokemons at a time.
- Implemented the **HS256 algorithm**, which was imported from **Passlib**, to hash user passwords and (along with **OAuth 2.0**) verify users when logging in.

Songful++ | *React, Node.js, Material UI*

- Built a **React** web app at **Hack the North 2021** that allows users to create a music playlist with stories.
- Utilized **Spotify's Web API** to go through authorization requests to fetch Tracks and Albums, where the **OAuth 2.0** authorization framework is used for authentication.
- Simplified the process of adding songs and managing playlists by using **Coda API** to retrieve songs from Coda documents.

Market Sentiment | *Python, Jupyter, Scikit-learn*

- Built a **Jupyter** notebook on **Google Colab** that predicts the market sentiment based on top news headlines with **87%** precision.
- Retrieved historical Dow Jones values and breaking news from the past 14 years with **Pandas** to be trained.
- Utilized **VADER Sentiment Analysis** and **NLP** to get sentiment and polarity scores of breaking news.
- Implemented **Linear Discriminant Analysis (LDA)** from **scikit-learn** to train the **NumPy** datasets.

Awards

- Stiddle's Choice for Projects with the Most Growth Potential at **Def Hacks Global 2.0** for **RemCol** (2020)
- 2nd Best Project (Advanced Track) at **Def Hacks Global 2.0** for **RemCol** (2020)
- Faculty of Mathematics Global Scholarship **$25,000 - Highest Value** (2021)
- Indonesia National Science Olympiad Qualifier in Mathematics (2019, 2020)
- Best Use of DataStax Astra at RamHacks (2020)