

# Jacob Paetsch

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## University of Alberta Academic and Co-op Status

Computer Engineering, BSc. Co-op Degree

Graduating Class - April 2022

Completed Academic Terms

24 months - all 8 academic semesters

Completed Co-op Work Terms

20 months - all 5 co-op work placements



Engineering Co-op Program  
University of Alberta

## Technical Skills Summary

- **General** – Experience with a multitude of programming languages (C/C++, Java, Python, C#, Kotlin, SQL/T-SQL) using a variety of integrated development environments (Visual Studio, Android Studio, PyCharm, Vim). Confident in handling various data structures and algorithms, developing solid products using best-practice software architecture principles, and learning new skills to provide value to my team.
- **Web Development** – Proficiency in website, webapp, and RESTful API development using Flask, Django, and .NET full stack frameworks. Exposed to JavaScript (primarily React) and HTML/CSS for front-end work as well as WIX and WordPress for small, quick website projects.
- **App Development** – Experience in Android mobile app development using Java, Kotlin, and Android Studio IDE
- **Backend Design** – Knowledge of solid, secure database design principles, skill in various models and flavours of database management systems configured both locally and in the cloud (Microsoft SQL Server, PostgreSQL, Firebase NoSQL, SQLite, AWS, Microsoft Azure, etc.), and can document object relationship diagrams.
- **Machine Learning** – Actively pursuing machine learning. Took supplementary elective courses throughout my degree, developed capstone projects touching on the subject, and began to get involved in the Kaggle community for machine learning competitions. Getting experience using Python libraries such as Scikit-Learn, Keras, TensorFlow, and PyTorch to build models tuned for specific use cases.
- **Low-Level Design** – Exposed to concepts in low level system design using assembly languages and FPGA's in addition to distributed, concurrent, and thread-level programming implementation
- **Basics** – Mastery of Microsoft software (Word, Excel, PowerPoint) and skill using PowerBI for analytical reporting

## Work Experience

### PRIMED Medical Products Inc.

Edmonton, Alberta

(Software Developer and Business Analyst Co-op)

(September through December, 2021 - 5<sup>th</sup> Co-op Work Term)

- Analyzed a sensitive financial process to improve efficiency and create workflow / recommendation documents
- Worked alongside a seasoned SQL developer to form queries, create stored procedures, and tune various backend tables for the company's database ecosystem
- Developed a time-tracking webapp prototype / framework for internal company use – used the .NET framework and Razor Pages with a layered service software architecture including automatic Azure AD security integration

### University of Alberta

Edmonton, Alberta

(Software Engineering Co-op)

(May through August, 2021 - 4<sup>th</sup> Co-op Work Term)

- Primary developer for a business professor at the U of A working his project: the Cultr toolkit, a distributed series of web scrapers with a client-facing web interface primarily designed for researchers and academic use
- Helped transition the entire project from multiple servers to a new cloud service provider, set up security on the new servers, and performed other Linux-based administrative, security, and configuration tasks
- The technology stack for the system was primarily the Python Django framework – other development work including configuring Nginx and Gunicorn for serving the project, utilizing Redis and Celery for caching and task concurrency, improving the current Django Rest Framework API used for communicating between the frontend and scrapers, working with Postgres as the primary database, and using Scrapy for web crawling and data gather

- Made general improvements to the system design; started to implement containerization using Docker, applied a microservices architectural design to the project, and updated documentation for use by future developers

## Switch Engineering

Edmonton, Alberta

(Software Developer Intern)

(January through August, 2020 - 2<sup>nd</sup> and 3<sup>rd</sup> Co-op Work Terms)

- Worked in a small, intimate team environment under the guidance of a full-time systems architect
- Introduced to the Django web development framework; primarily worked with Python but also exposed to front-end JavaScript, Bootstrap, and HTML/CSS in the web application design process for several client projects
- Worked on internal, automated workflow process applications using Microsoft PowerApps and Power Automate
- Designed and re-worked the company's website using WIX
- Developed automated email campaigns, custom landing pages, and a newsletter subscription service through MailChimp; was also responsible for writing blog articles and informational sections in the newsletters and website
- Quickly adapted to working from home during the pandemic – remained hard-working, busy, and diligent in continuing to provide value to the company despite the atmosphere of uncertainty and rapid workplace changes

## Long View Systems

Edmonton, Alberta

(Systems Consultant)

(May through August, 2019 - 1<sup>st</sup> Co-op Work Term)

- Provided deskside support services for Edmonton-based customers in my follow-up term with the company
- In-person support and issue resolution at various client sites ranging from office spaces to industrial sites
- Responsible for resolving huge variety of potential problems - from IT related issues to networking escalations
- Delivered hands-on support for users, attended weekly client meetings that ensured continual progress toward their IT infrastructure development, updated documentation, and wrote project strategy implementation material
- Utilized PowerBI to refine, organize, and display financial data as specified and requested by company executives

## Long View Systems

Calgary, Alberta

(Systems Consultant)

(May through August, 2018)

- Moved to Calgary for four months to be part of their Integrated Global Service Desk - took IT help calls, remoted onto client computers to resolve a variety of technical issues, and logged completed work using ticketing software
- Provided IT support for over 20 distinct companies and worked within their desired security protocols/workflows
- Worked on the night shift for weeks at a time to service overseas clients
- Increased my customer service skills while dealing with stressed callers - patience, empathy, and focus required
- Completed additional tasks including onboarding/termination of IT-related accounts, account unlocks/password resets, network connection issues, application problems, sync issues, software installs, and other ticketed issues
- Promoted from a call screener to a full desk agent after 3 weeks – role expansion with additional responsibilities

## Epic Outdoor Spaces

Edmonton, Alberta

(Labourer)

(2015 - 2019)

- Did hard labour with a small crew – built/renovated a variety of landscape construction jobs (fences, patios, etc.)
- Communicated effectively with my team to ensure jobsite safety, project efficiency, and positive workplace culture

## Volunteer Experience

- Was involved in a competitive FIRST robotics team (5064) for 3 years learning from a programming mentor
- Participated in HackED 2019 on a 3-person team to submit our project "One Stop Photoshop"
- Went on trips to build homes in Juarez, Mexico and work in food banks on Skid's Row, LA through Bethel, CSM
- Stepped up as a youth group leader at LHBC (over 12 regular weekly attendees in Grades 7 through 12)
- Was a weekly volunteer at "The Rock" (a breakfast-oriented soup kitchen in downtown Edmonton)

## Other Information

- Willing to relocate as required – fine with remote, in-person, or hybrid work environments
- Class 5 Advanced GDL with clean driver's abstract
- Enjoy travelling, skiing, rock climbing, and personal technological projects – always trying out new hobbies
- Actively, consciously trying to remain curious and be a life-long learner

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## List of References

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