



# Carl Ek

SENIOR SOFTWARE ENGINEER

## Details

Toronto  
Canada  
(415) 609-5058  
[elrack@gmail.com](mailto:elrack@gmail.com)

NATIONALITY  
Dual Canada/USA

## Links

[carlek.github.io](https://carlek.github.io)  
[www.linkedin.com/in/carlek](https://www.linkedin.com/in/carlek)  
[www.github.com/carlek](https://www.github.com/carlek)  
[carlek.hashnode.dev \(blog\)](https://carlek.hashnode.dev)

## Skills

Communication  
Leadership  
Teamwork  
Airflow  
AWS  
C/C++  
Cassandra  
FastAPI, GraphQL  
Flask, Chalice, Tornado  
Docker, Kubernetes  
Github  
Java  
Kafka  
MySQL  
NumPy  
Pandas  
PostgreSQL  
Python3  
SQLAlchemy  
Tableau  
Terraform  
Typescript

## Profile

Accomplished principal and consultant with recent experience in fullstacks and microservices for GreenTech, AdTech, and FinTech. Prior experience as consultant on software quality and lead developer of C/C++ compiler extensions for High Performance Computing. I am passionate about leveraging technology to drive innovation and deliver real-world benefits.

## Employment History

### Principal, Self-Employed, Various

JAN 2008 – PRESENT

Training LLMs for code gen and mathematics (*OpenAI, Gemini, Claude*). Exploring hybrid classical-quantum computation. Building dApps and fun ChatBots. *IBM Qiskit, Python, C++, Motoko, ICP, WandB, LangChain, AWS Bedrock*.

### Lead Python Engineer, Softvision (Freelance)

NOV 2022 – MAR 2023

Attended bootcamp training initiative tailored to meet client demands and requirements. *Java, Spring Boot, Microservices, AWS*.

### Senior Software Engineer, NextEra Analytics (Green Energy)

JAN 2022 – AUG 2022

Drove project for green energy calculators to track carbon usage where asynchronous endpoints ingested data from IoT smart meters. Developed a scalable design pattern for an abstract database model deemed so valuable it was adopted by other teams. *Python, AWS Lambda, Terraform, Kubernetes, PostgreSQL*

### Senior Tools Engineer, Tatari (AdTech)

MAY 2021 – DEC 2021

Spearheaded development of APIs for data ingestion and visualizations for onboarding new clients. Designed client service tools and visualizations to detect anomalies, leading to a 30% increase in customer retention. *Python, GraphQL, Terraform, Airflow, Kubernetes*.

### Cloud Engineer, Change Healthcare (Microservices)

NOV 2020 – APR 2021

Implemented a health care data ingestion system with automated translation pipelines. Authored code to aggregate and standardize data formats, increasing revenue streams by 20% of the clinic portfolio. *Python, AWS microservices, Postman, Regex, X.12, HIPAA*

### DB Admin and Developer, World Library Foundation

AUG 2020 – OCT 2020

Acted as sole full-stack developer to recover a dormant Gutenberg self-publishing website and its database. Successfully revived the platform, leading to a 60% return of legacy customers and ultimately saved a non-profit organization. *MS-SQL Server, T-SQL, C#, ASP*.

### Senior Cloud Engineer, Agari (SaaS, Microservices)

JUL 2019 – APR 2020

Implemented new features for secure-email: micro-framework endpoints, system dashboards, and app notifications. Conducted a successful experiment with 1000 customers utilizing a new at-scale sensor design. *Chalice, Grafana, Slack, Terraform, Docker*

### Senior Software Engineer, Oculus (Manufacturing)

OCT 2018 – DEC 2018

Investigated and developed initial designs and prototype asynchronous APIs for a new assembly line concept. *Python, Tornado*.

### Senior Engineer, TrueAccord (FinTech)

JAN 2018 – AUG 2018

Lead backend development for automated debt collection. Key projects focused on establishing baseline metrics and conducting software experiments. *Python, PostgreSQL, Protocol Buffers*.

### **Lead Software Engineer, Moasis (AdTech)**

JAN 2014 – DEC 2016

First technical employee on a team which launched a hyperlocal mobile ad delivery system. Built a skilled team, enhanced processes, and created backend infrastructures. Developed dashboards for product and system analytics, identified and mitigated billing discrepancies related to packet loss or fraud, yielding savings of \$25K/month. *Python, Django, PostgreSQL, Cassandra, Tableau.*

### **Lead Staff Programmer, CoreLogic (FinTech)**

JAN 2011 – DEC 2013

Delivered full-stack mortgage-backed security bond analytics by implementing continuous build/test tools and developing *ETL* processes, interactive bond rating charts, and efficient APIs for data extraction and analysis. *Python, AWS, R, MySQL.*

### **Architect, Code Integrity Solutions (Consulting)**

JAN 2009 – DEC 2010

As the first #1 technical employee, contributed to expanding the client base from zero to over 20 customers in a thriving startup consulting environment. Mentored staff and established best practices for internal use and partner companies, while developing a comprehensive suite of tools to enforce *Effective C/C++* coding standards. Noteworthy projects included C++ validation for *NASA's Mars Lander (Curiosity)*.

### **Senior Engineer, Coverity/Synopsys (Professional Services)**

JAN 2007 – DEC 2008

Post and pre-sales consultant to a world-wide customer base on issues regarding code quality in multithreaded and embedded environments. Installed, tuned, and trained senior technical staff on static analysis tools over hundreds of deployments, and delivered engaging seminars at embedded systems conferences.

### **Software Engineer, Electronic Arts**

DEC 2005 – DEC 2006

Developed high-performance cross-platform *C++* language extensions for vectorized algorithms optimized for PlayStation and Xbox, including writing sample code, developing a developer guide, and authored a detailed report on features, benefits, challenges, and future possibilities for senior technical staff. *C/C++, C#, Parlance*

### **Lead Software Engineer, IBM Canada Software Lab**

JAN 1998 – DEC 2005

Designed and implemented innovative methods for supporting highly efficient vector algorithms in C, leading the team that developed *Unified Parallel C (UPC)*, which ultimately became an IBM product. *C, C++, OpenMP*

## **Education**

**Bachelor of Science, University of Manitoba**

**Master of Mathematics, University Of Waterloo**

**Predictive Analytics (Coursework), Northwestern University**