Carl Ek

SENIOR SOFTWARE ENGINEER

Details

Toronto
Canada
(415) 609-5058
elrack@gmail.com

NATIONALITY
Dual Canada/USA

Links

carlek.github.io

www.linkedin.com/in/carlek

www.github.com/carlek

carlek.hashnode.dev (blog)

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 currently exploring quantum computing with recent experience developing cloud-based applications and training LLMs on mathematics and code generation. I am passionate about leveraging technology to drive innovation and deliver real-world benefits. Ongoing certifications from IBM Quantum and Ûdemy.

Employment History

Principal, Self-Employed, Various
JANUARY 2008 — PRESENT

Projects: Developing searchers and solvers with hybrid classical-quantum tools. Enhancing LLM for performance and accuracy of generated code and mathematics, and various ChatBots. Decentralized dApps for the Internet Computer. *IBM Qiskit, Python, C++, Motoko, ICP, TypeScript, OpenAI, WandB, LangChain, AWS Bedrock*.

Lead Python Engineer, Softvision (Freelance)
NOVEMBER 2022 — MARCH 2023

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

Senior Software Engineer, NextEra Analytics (Green Energy)
JANUARY 2022 — AUGUST 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 — DECEMBER 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)
NOVEMBER 2020 — APRIL 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
AUGUST 2020 — OCTOBER 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)
JULY 2019 — APRIL 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)
OCTOBER 2018 — DECEMBER 2018

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

Senior Engineer, TrueAccord (FinTech)
JANUARY 2018 — AUGUST 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)

JANUARY 2014 — DECEMBER 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)

JANUARY 2011 — DECEMBER 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)

JANUARY 2009 — DECEMBER 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)

JANUARY 2007 — DECEMBER 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

JANUARY 2005 — DECEMBER 2007

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#, Parlanse*

Lead Software Engineer, IBM Canada Software Lab

JANUARY 1998 — DECEMBER 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