# MICHAEL LOWENSTEIN

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## PROFESSIONAL SUMMARY

Experienced Senior Software Engineer with a focus on designing, developing, and delivering scalable enterprise software. A history of success in both front-end and back-end engineering, launching products that cater to businesses of all sizes. Skilled in system modernization, managing technical documentation, mentoring emerging developers, and crafting effective, future-proof solutions.

## EDUCATION

**University of Calgary**                                                                 June 2013 - December 2016
- Computer Science - Software Engineering
- Bachelor's of Science

**University of Calgary**                                                           September 2009 - May 2013
- Kinesiology
- Bachelor's of Science

## EXPERIENCE

### Senior Freelance Software Engineer

**1280 Labs Inc. & Independent**                                                        March 2025 - Present
- **ANGULAR REACT TS C# .NET CORE PYTHON NODEJS POSTGRESQL**
- **Team Lead** on the front-end application for new **AI-enabled Talent Management CRM**
- **Engineered** a **suite of backend services** using Python, Node.js, and Redis
- Developed and maintained **Flutter-based mobile client** and Angular web dashboard
- **Collaborated across product**, **data science**, and **DevOps teams** to refine the cloud-native API architecture
- **Maintained automated testing suites** and provided production-level observability
- **Prototyping of Back-End services in different frameworks** - Ruby on Rails, Golang, Rust, NodeJS, Python, .NET CORE
- **Architected high-throughput microservices handling concurrent user sessions and real-time data processing,** implementing distributed caching strategies and horizontal scaling patterns that would translate directly to blockchain transaction processing systems
- **Built resilient message queue systems for cross-service communication**, designing fault-tolerant architectures with retry mechanisms and dead letter queues essential for financial transaction reliability and audit trails
- **Led the integration** of **AI-driven features** for **device diagnostics** and behavior analytics

### Senior Back-End Software Engineer

**College House at House Analytics**                                              September 2024 - March 2025
- **C# .NET CORE POSTGRESQL MACHINE LEARNING VUEJS PYTHON NODEJS + NESTJS**
- Design and implement enterprise-scale **.NET Core** solutions, including **CQRS Web APIs**, database administration, and **AWS** infrastructure integrations
- Led the planning, prototyping, and deployment of back-end infrastructure for analytics products, modernizing legacy systems and creating a test automation framework to enhanced efficiency and scalability
- Accomplished the design and **prototyping** of a **state-of-the-art Message Bus architecture**, exploring a range of technologies like **AWS MQ/SQS, RabbitMQ, Redis**, and **Kafka** to maximize communication effectiveness and reliability.
- Successfully **integrated advanced machine learning features** into production systems, leading to improved planning, presentation, testing, and deployment processes.
- Collaborate **directly** with **stakeholders** to **future-proof products,** ensuring alignment with business goals, and author detailed **documentation** for end-users and internal teams

### Senior Software Engineer

**NCAL Engineering**                                                               January 2024 - February 2025
- **C# .NET CORE ANGULAR POSTGRESQL REACT TS VUE PYTHON NODEJS + NESTJS**
- **Implement ETL processes** to synchronize time-tracking APIs with production databases using **NestJS, NodeJS JWT Token Authentication, Python** scripting for setup & teardown of short-lived servers, and Redis Cache APIs - **Golang was used for heavier workflows due to performance botttlenecks**
- Build and extend a custom data management warehouse for engineering graphics and metrics using Angular 16/17, .NET Core Authentication APIs, and supporting NodeJS microservices
- Design and deploy invoice automation and analytics dashboards leveraging Angular 16, React UI, and C# .NET Core Authentication APIs, supported by NodeJS microservices for caching, file storage, and database access
- Manage DevOps pipelines and deployments using Azure Containers, App Services, in-house remote VMs, and Docker Compose to ensure seamless integration and system reliability
- Designed and deployed an Invoice Automation Platform, saving the Senior Engineer and Founder a full week of hours every month, streamlining financial workflows

### Senior Software Engineer

**FullStack Labs**                                                               December 2021 - December 2023
- **C# .NET CORE NODEJS + NESTJS MACHINE LEARNING NEXTJS REACT TS PYTHON**

- **Led** the planning, design, and implementation of front-end systems for a **Custom Cabinetry CRM/Project Management Application**
- **Identified and co-led** the **refactoring** and **integration** of **Functional Components** into the flagship FSL Admin Application.
- **Authored** back-end **ETL applications** using Typescript, Node.js Express, and NestJS frameworks - **global invoicing accuracy improved from 95.1% to 99.8%.**
- **Machine Learning R&D** for ETL pipelines - migration of high-throughput + low-latency workflow to **Golang and Rust for performance comparison.**
- **Engineered high-availability ETL pipelines processing financial data with 99.8% accuracy**, implementing robust error handling, transaction rollbacks, and data integrity checks critical for financial services compliance
- Developed and maintained the front-end architecture for an **Enterprise Association Management Portal**

### Software Engineer

**Peloton Computer Enterprises**                                         December 2016 - December 2021

- Developed a new web application, ProdView, for task scheduling and operations in the oil and gas sector
- Created MVPs and proof-of-concept applications for client demos
- Designed and implemented Angular front-end MVPs to showcase features before full-scale planning
- Maintained and enhanced the Land Management System for oil and gas clients
- Managed Linux servers, optimized PostgreSQL and FreeBSD systems
- Rebuilt legacy systems as polished microservices/pilots using modernized tools and frameworks - Ruby on Rails, NestJS, Golang, Rust
- **Developed distributed task scheduling systems for oil & gas operations**, creating reliable job queues and worker processes that mirror the architectural patterns used in blockchain networks and cryptocurrency mining coordination
- **Implemented secure API gateways and authentication middleware for financial data access**, building authorization layers and rate limiting systems essential for protecting high-value financial transactions and user account security

### Software Developer

**SIACharts (SIA Wealth Management)**                                     December 2015 - December 2016

- Rebuilt a legacy software application using modern web technologies
- Developed a suite of financial market tools
- Utilized MSSQL Server, ASP.NET (C#), JavaScript, jQuery, Bootstrap, and Python test suites

## SKILLS

**Software Development:** Angular, React, Vue, Python, NodeJS, NestJS, Machine Learning, Generative AI Development, Express, C#, ASP.NET, .NET Core, MS SQL Server, Real-time Analytics, TypeScript, JavaScript, HTML, CSS, SCSS, Rust, PostgreSQL, AWS, NoSQL, Perl, Heroku, Azure, Remote VMs, Docker, Kubernetes, Shell Scripting, Linux System Administration, DevOps, Discovery, Optimization, Legacy Code Modernization, Leadership, Change Management, Mentorship, Data Analytics, Clean Code, Software Architecture, Data-Driven Design, Market Analysis