

# Thomas Gebert

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## Computer skills

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Java 17	Apache Spark	C++	FFMpeg
Python	GCP	F#	CMS
SQL	Erlang/OTP	Go	TLA+
Clojure	Linux	JavaScript	Vert.x
.NET Framework	Shell Scripting	Node.JS	Docker
Kafka	ZeroMQ	Scala	

## Education

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### Western Governor's University

Salt Lake City, UT

*B.S. Computer Science*

### University of York

York, United Kindom

*Ph.D. Studies in Computer Science (Incomplete)*

- Conducted research in Formal Methods and Robotics, including model checking and algorithmic proof systems like Isabelle, Haskell, and FDR4.
- Built and evaluated verification tooling for robotic systems, emphasizing correctness under concurrent execution.
- Completed 3 years of advanced coursework and independent research.
- Departed program in good standing to pursue high-performance computing roles in industry.

## Experience

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### Schrodinger

New York, New York

*Senior Software Engineer*

*February 2024 – April 2025*

- Maintained topology of Kafka Streams applications.
- Augmented RocksDB and optimized write throughput on streaming applications.
- Replaced the use of RocksDB with a custom backend using PostgreSQL.
  - Achieved roughly 50% the performance while cutting cloud storage costs down by 80%, and reduced duplication across nodes.
  - Utilized Vert.x, Caffeine Caches, Bloom Filters, LMAX Disrupter, and various heuristics to minimize latency without overwhelming the system.
- Utilized Google Cloud Platform to deploy and maintain distributed applications.

### Lead Bank

New York, New York

*Senior Software Engineer*

*September 2023 – November 2023*

- Helped scale and maintain the ACH processing system.
- Worked with AWS Lambda, AWS Step Functions, Go, Java, and DynamoDB.
- Used Message Queues like SQS to communicate between services.
- Utilized Docker for local development and testing of applications.
- Enhanced deployment scripts to handle different types of services.
- Oversaw the onboarding of multiple clients onto our platform.

**CUNY City Tech***Adjunct Lecturer (Contract)***New York, New York***August 2022 – June 2023*

- Taught introductory programming to computer engineering students.
  - Introductory and advanced Python 3 and Java 17.
- Created and graded homework assignments and tests.
- Coded interactive learning modules in JavaScript and Python for students to practice.
- Worked with professors designing cyber-physical systems to help formalize robotics applications.
- Given a perfect score for teacher reviews for two semesters in a row.

**OnFrontiers Inc.***Principal Software Engineer***New York, New York***February 2023 – May 2023*

- Facilitated video communication of clients to potential consulting jobs.
- Redesigned core platform to utilize an asynchronous pipeline.
  - Presented my design to Junior and Senior engineers, as well as CTO.
  - Design was approved by team and CTO.
  - Personally led the implementation of the design.
  - Wrote infrastructure code in Python and Go.

**Reddit Inc.***Senior Software Engineer***New York, New York***August 2022 – November 2022*

- Used Python, Go, and Docker to help rebuild the image resizing service.
- Utilized Kafka to build distributed systems.
- Wrote build configuration scripts in Python.
- Worked on deployments to Google Cloud Platform.
- Designed and presented new a new version of image caching service.
  - Implemented design after being approved by committee.
  - Decreased cost of image-resizing by over forty percent by moving service in-house instead of outsourcing.

**Walmart Global Tech***Staff Software Engineer***New York, New York***August 2021 – August 2022*

- Mentored junior and mid-level engineers in distributed computing and functional programming.
- Made use of message queues to schedule and partition work across multiple nodes.
- Delegated and managed work across several engineers when designing distributed systems.
- Built NLU pipelines for the Chatbot on walmart.com utilizing the Microsoft Bot Framework.
  - Utilized the Microsoft Bot Framework, F# and C#.
- Architected the multi-cluster design of the Chatbot.
  - Decreased chatbot latency by over thirty percent across multiple clusters.
  - Coordinated the release of multi-cluster deployment of chatbot.
- Utilized Microsoft Azure, Linux, and Python to build infrastructure.
- Designed and built APIs with GraphQL.

**Thrive Global***Contract Engineer***New York, New York***March 2021 – August 2021*

- Utilized Node.js to build the localization features.
- Used Docker to build microservices.
- Wrote build scripts in Python.

**Apple Inc.***Senior Software Engineer***New York, New York***September 2018 – February 2021*

- Designed and built a telemetry and analytics system for finding potential bottlenecks in the cache indexes utilizing Java 11, Clojure, Kafka, Apache Spark, and Tableau.
- Fixed issues and bugs in the iTunes server backend.
- Built a Kafka-based buffering service to reduce load on indexing and caching for iTunes.
- Maintained and expanded rule engine for iTunes, utilizing Objective-C and C++.
- Deployed Java code onto Amazon Web Services and Linux.

### **Walmart Global Tech (Jet.com)**

*Senior Software Engineer*

**Hoboken, New Jersey**

*July 2016 – August 2018*

- Wrote Microservices in F#.
- Utilized the Microsoft Azure stack.
- Used Apache Kafka to send data between services.
- Utilized Python in conjunction with Apache Spark ML to figure out optimal time to send email.
- Rebuilt the transactional email system to scale to Jet.com size.
- Taught the F# language during code bootcamps.

### **Tone Mobile**

*Software Engineer*

**New York, New York**

*September 2015 – June 2016*

- Wrote and maintained Erlang backends.
- Created modules for Ejabberd.
- Integrated chat server with Node.js backend.

### **New York University**

*Research Scientist*

**New York, New York**

*March 2015 – September 2015*

- Debug Angular.JS frontends.
- Debug Scala backends.
- Help write Haskell backends.
- Programmatically use FFMpeg for video transcoding.

### **Sq1**

*Application Developer*

**Dallas, Texas**

*May 2014 – February 2015*

- Used the Joomla and Wordpress CMS systems to build websites for advertising clients.
- Wrote backends in Node.js.

### **Senico, LLC**

*Software Engineer*

**Dallas, Texas**

*June 2013 – April 2014*

### **Propulsion Labs**

*Software Engineer*

**Dallas, Texas**

*January 2013 – June 2013*

### **Amerinational Management Services**

*Web Developer*

**Orlando, Florida**

*January 2012 – December 2012*

### **Lockheed Martin**

*Software Engineering Intern*

**Orlando, Florida**

*May 2011 – August 2011*

## **Public Speaking**

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### **Lambda Days 2023 – Why Design Your Own Levels When Your Computer Can Do it?:**

Presented an introduction to doing WebGL with ClojureScript, in addition to showing a few simple procedural level generation algorithms for games

### **Lambda Days 2022 – Predicting and Preventing Chaos with Formal Methods in TLA+:**

Presented in Krakow, Poland, an introduction to formal methods via a brief description and demonstration of the TLA+ specification language.

**Lambda Days 2020 – Distributed Hash Tables, Video, and Fun!:** Presented in Krakow, Poland, the same talk as stated above.

**Clojure Conj 2019 – Distributed Hash Tables, Video, and Fun!:** Presented in Durham, North Carolina, a demonstration of a project involving a video sharing system using distributed hash tables and to farm out video transcoding.