

# Prodromos Gerakios

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## Summary

Senior Software Engineer with over 15 years of experience specializing in high-scale distributed systems, secure cloud infrastructure, and AI/ML applications. Proven success in delivering mission-critical systems across Search, Financial Services, and Contact Center AI, consistently achieving over **99.99% uptime**. Deep expertise in architecting real-time fraud detection systems handling over **1,000 QPS** with **sub-20ms latency** and driving infrastructure optimizations that have saved over **30%** in resource consumption. A track record of leading complex, cross-functional projects that have resulted in **8x** improvements in development velocity.

## Key Achievements

- > Architected a real-time fraud prediction system processing **1,000+ QPS** at a **sub-20ms latency**, which contributed to a significant reduction in fraudulent transactions for major financial institutions..
- > Led the re-architecture of Google Search's batch data processing pipelines, achieving a **30% reduction in cloud costs** (GCU/RAM), saving the equivalent of **1.5 employee salaries** annually. Secured the PII of large enterprise customers by leading the VPC-SC security implementation for 10+ services on Google's Contact Center AI Platform..
- > Optimized a distributed scheduling algorithm at Workday, resulting in an **80% improvement** in job execution time and a **5x increase** in throughput.
- > Accelerated test automation development by **8x** by creating a DSL and AI-based code generation framework, reducing manual QA effort by over **70%**.
- > Published **15 peer-reviewed papers** in top-tier conferences and journals, including OOPSLA and Science of Computer Programming.

## Work Experience

### ♦ Senior Software Engineer

Google, Zurich, Switzerland July 2018 – Present

- > Directed a team of **4 engineers** to build a deterministic test code generation framework, accelerating test development time by **8x** for **20+ developers**.
- > Engineered a real-time voice authentication integration with **sub-500ms latency**, managing bidirectional voice streams across **5** internal and external stakeholder teams.
- > Secured sensitive platform resources by implementing VPC Service Controls for **10+ services**, ensuring **100% security compliance** for enterprise customers.
- > Enabled instant transaction assessments for **3** major card providers by engineering a real-time fraud prediction service with **sub-20ms latency** and **1,000 QPS**.
- > Improved feature aggregation speed by **40%** and reduced data retrieval bottlenecks by **60%** by pioneering an "Active MemCache" architecture.
- > Achieved a **30% reduction** in GCU/RAM consumption by optimizing batch pipelines for knowledge panel systems.
- > Improved sensitive entity alias precision by **15%**, impacting over **1 billion** Google Search queries daily.

**Technologies:** Golang, Java, C++, GCP (GKE, BigQuery, Dataflow, Spanner, Vertex AI), Borg, MLOps, Kubeflow, gRPC, VPC-SC, Terraform

### ♦ Software Development Engineer III

Workday, Dublin, Ireland May 2016 – June 2018

- > Improved job execution time by **80%** and increased throughput by **5x** by redesigning a distributed scheduling algorithm for the Cloud Master service, enabling faster processing for over **1,000 tenants**.
- > Ensured **100% continuous availability** for a scheduler handling **10,000+** daily jobs by engineering a worker pool draining mechanism for Zero-Downtime-Deployment.
- > Maintained **99.99% uptime** by owning the complete monitoring, alerting, and build pipeline for the core job scheduler, serving over **200** internal developers.

**Technologies:** Scala, Akka (clustering, remoting), Zookeeper, Kafka, Java 8, Spring, Hibernate, MySQL

### ♦ Software Engineer

Advantage Financial Systems, Dublin, Ireland June 2015 – April 2016

- > Developed a full-stack Banking-as-a-Service (BaaS) platform for **2** UK banks, securely handling over **10,000 customer accounts** and a portfolio over **£5 million**.
- > Engineered **4** core banking modules for security and encryption, reducing transaction fraud risk by over **20%**.

**Technologies:** JEE7, Java 7, AngularJS, PostgreSQL, WildFly, Infinispan

## ♦ Software Engineer

**Cognify, Athens, Greece** March 2014 – February 2015

- Built high-traffic e-commerce platforms for **2** major telecom providers supporting over **1 million** daily page views.
- Increased checkout conversions by **5%** by integrating **3** new payment gateways.

**Technologies:** JEE6, Oracle ATG, WebLogic, Oracle 11

## ♦ Senior Researcher

**University of Athens (MorphPL Project), Athens, Greece** December 2012 – March 2014

- Developed **2** novel Java compilers (MorphJ, DelphJ), with findings published at **3** top-tier international conferences (OOPSLA, GPCE).

**Technologies:** Java, Compilers, Metaprogramming

## ♦ Software Engineer

**GRNET (Greek Research Network), Athens, Greece** May 2012 – December 2012

- Architected the "Aquarium" billing backend for the Okeanos Cloud IaaS, processing usage data for **500+ cloud projects** and generating over **€100k** in annual revenue.

**Technologies:** Python, Scala, Akka, MongoDB, RabbitMQ

## ♦ Software Engineer

**Hellenic Army, Computer Support Center, Athens, Greece** September 2011 – May 2012

- Reduced record-keeping errors by **15%** by developing a Human Resources application for **500+ personnel** during obligatory **9-month** service.

**Technologies:** Java, Swing, JBoss, Oracle

## ♦ Software Engineer

**GRNET (Greek Research Network), Athens, Greece** November 2006 – May 2009

- Contributed to **2** European research projects (GridCC, Geant/PerfSONAR) used by over **50 research institutions** across Europe.

**Technologies:** Java, C++, JSP, Tomcat

## Technical Skills

- ♦ **Expert (5+ years of production experience)**

Category	Technologies
Languages	Java, Golang, C++, Python, Scala
Cloud & Platforms	Google Cloud Platform (GCP), Kubernetes, Borg, Docker
Architecture	Distributed Systems, Microservices, Event-Driven Architecture, API Design
Databases	BigQuery, PostgreSQL, MySQL

- ♦ **Proficient (2-5 years of experience)**

Category	Technologies
Infrastructure	Terraform, Jenkins, GKE, Istio
Messaging	Kafka, RabbitMQ, gRPC
ML/AI	MLOps, Kubeflow, Vertex AI
Databases	Cloud Spanner, MongoDB

- ♦ **Familiar (1-2 years or non-production experience)**

Category	Technologies
Languages	Kotlin, JavaScript
Frameworks	Spring, Hibernate, Akka, AngularJS

## Education

- ♦ **PhD in Computer Science**

National Technical University of Athens 2007 – 2012 - Thesis: Static Safety Guarantees for Concurrent Programming Languages - Published **10+ papers** at top ACM conferences (OOPSLA, TLDI, PLOS).

- ♦ **International MBA**

Athens University of Business and Economics 2005 – 2006

- ♦ **BA Software Engineering (First Class with Distinction)**

University of Edinburgh 2001 – 2005 - Class Medal (Ranked **1st** in class) & British Computer Society Prize.

## Selected Publications (15 total)

- > Forsaking Inheritance: Supercharged Delegation in DelphJ — OOPSLA 2013
- > Static Safety Guarantees for a Low-level Multithreaded Language — Science of Computer Programming, 2014
- > A Type and Effect System for Deadlock Avoidance — TLDI 2011, ACM
- > Race-free and Memory-safe Multithreading in Cyclone — TLDI 2010, ACM
- > Foo: A minimal Modern OO Calculus — FTfJP 2015

## Languages

Language	Proficiency
Greek	Native
English	Fluent