

Minor E. Gordon, Ph.D.

Curriculum Vitae

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Summary

I am a **software architect** and **technical lead** with 9 years of experience in industry. I specialize in building:

- **complex web sites and web applications**, such as Notablist.com
- **software-as-a-service (SaaS) implementations**
- **programming tools**, such as compilers and runtimes for domain-specific languages

Education

2009	Ph.D., Computer Science , University of Cambridge Dissertation: Stage scheduling for CPU-intensive servers
2005	Diplom Informatiker , Technische Universität Berlin Diplomarbeit: Staged design for highly concurrent web servers
2003	B.Sc., Computer Science , Oklahoma State University Tulsa

Skills

Languages	English (native); German (fluent)
Programming	Java; Python; TypeScript; C++; C; SQL; C#; JavaScript
Frameworks	Thrift; Protobufs; Guice; Guava; Shiro; jQuery; Bootstrap; Knockout.js; Backbone.js
Databases	ElasticSearch; MongoDB; Redis; SQLite; H2; SQL Server
Platforms	Windows; Debian- and RedHat-based Linux; OS X
IDEs and tools	Visual Studio; Eclipse; IntelliJ; Visual Studio Code; Maven; CMake
Revision control	Git; Subversion

Work Experience

04/2018 –	Software architect and technical lead at Asemio, LLC / Tulsa, OK Asemio is a technology consulting company for community data systems.
07/2012 – 04/2018	Independent software consultant at MG4 Consulting, LLC (self-employed) / Remote
12/2011 – 06/2012	Software architect and full-stack developer at Grokio, LLC / New York, NY GrokIO was a business intelligence startup I co-founded.
08/2011 – 12/2011	Software architect and backend developer at Birchbox Inc. / New York, NY Birchbox is a personalized subscription service for women's cosmetics samples.
05/2011 – 08/2011	Backend developer at Chartbeat Inc. / New York, NY Chartbeat is a real-time web analytics software-as-a-service provider.
10/2010 – 04/2011	Software engineer at IBM Research / Hawthorne, NY
01/2009 – 07/2010	Programmer / Analyst at NEC High Performance Computing Europe GmbH / Stuttgart, Germany

Projects

04/2018 –	Software architecture, full-stack development, and technical leadership for Asemio, LLC / Tulsa, OK
Activities	Planned projects, including user story mapping, release design, technical architecture, and time estimation

Responded to RFPs and other internal and external needs for technical expertise

Supported the technical team by mentoring junior developers, interviewing, recruiting, and reviewing code

Designed and implemented software in Python, C++, and TypeScript for internal and external projects:

- Plaintext and privacy-preserved (Sharemind) record linking
- Asset mapping using a graph database (neo4j)

06/2017 – 04/2018 Motivated Cognition experiment at Columbia University / New York, NY

Motivated Cognition is a psychology research experiment investigating the effects of cognitive bias on our consumption of information online.

Activities Created a complete web application from high-level requirements, using TypeScript, Knockout.js, and webpack on the frontend; Java with microservices, YAML configuration, and MongoDB persistence on the backend; generated code for models and services in TypeScript and Java; Jenkins continuous integration; and Docker deployment

Translated screens from a graphic designer into pixel-perfect CSS and HTML

Integrated with Mechanical Turk for subject recruitment

04/2016 – 04/2018 Full-stack development for Polygon Analytics Ltd. / Edinburgh, Scotland

Activities Designed and implemented proprietary software in C++ and Python

09/2014 – 04/2018 Notablist email newsletter search engine for Notablist, Inc. / New York, NY

Notablist indexes millions of email newsletters from hundreds of thousands of publishers and provides both a search interface and real-time change alerts to users.

Activities Backend prototyping in Python:

- Classified signup responses and mapped form inputs using numpy/scipy/scikit-learn

Backend production rewrite in Java:

- Generated Python JSON-RPC clients, Python command line tools, Java service interfaces and abstract implementations, and Java JSON-RPC servlets from Thrift interface and data structure definitions
- Implemented Guice-injected Java micro-services that encapsulated MongoDB collections; ElasticSearch indices; Redis databases; S3 buckets; screenshotting and signups with Selenium; SpamAssassin checking; logstash queries; Stripe integration; Drip (CRM) integration; MailChimp, SparkPost, and SendGrid transactional email posting; etcd locking; DNS and whois querying and parsing; DMOZ category and Alexa and Quantcast rank lookups
- Designed and implemented a scalable distributed system for processing Common Crawl WARC records and submitting newsletter signups
- Reported metrics to InfluxDB
- Created administrative user interface in Vaadin
- Set up Jenkins continuous integration
- Deployed with Docker+Compose on real hardware

Frontend:

- Assumed responsibility for a three year-old Bootstrap+Backbone.js+Marionette.js code base in JavaScript
- Incrementally migrated code to TypeScript with Knockout.js
- Added Selenium (Java) browser tests

07/2012 – 04/2018 TeraScript product suite for Tronics Software, LLC / El Dorado, CA

TeraScribe and TeraScript Server are a visual development environment and server-based runtime for TeraScript Action Files (TAFs), TeraScript Class Files (TCFs), and the TeraScript Markup Language (TML).

TML is a markup-based web application language, similar in spirit to ColdFusion. TAF and TCF are ways of organizing TML.

Activities TeraScript Server 8:

Rewrote TeraScript 7 in Java while maintaining strict backwards compatibility:

- Grammar-based compilers for TML and associated little languages using ANTLR
- Tree interpreters for TML, TAF, and TCF

- Versioned OSGi bundles with Maven and Apache Felix
- Library of standard functions, primitive types, and collections with extensive unit tests

TeraScript Server 7 (formerly Witango Server):

Reorganized, cleaned up, and modernized a 17-year-old C++ code base and addressed numerous bugs and feature requests for the server's first major release in over two years; now in maintenance releases

Eliminated diverging platform-specific build systems (on Win32, Linux, and OS X) in favor of CMake and ported the code base to Win64 using Visual C++ 2012

Designed and implemented a SQL generator that visits dialect-specific trees of SQL-99 constructs

TeraScribe 8:

Reorganized and cleaned up a 10-year-old Java Swing code base in order to add a number of features to the code editor, including autocomplete and syntax highlighting, and refit the data source management interface to use JDBC metadata

Subcontracting:

Debugged production installations of TeraScript Server 7 and 8

Developed cross-platform (Android, iOS, Windows) mobile app prototype with Xamarin Forms and C#

04/2017 – 05/2017 Drug name comparison project for PSW Applied Research Inc. / Toronto, ON

Activities Implemented Kondrak's phonetic alignment and similarity algorithm (ALINE) and a bigram-based orthographic algorithm (BI-SIM) as a PostgreSQL C extension

Built a JavaScript demo application using jQuery and Bootstrap

04/2014 – 07/2014 Development of the Muninn Project for PSW Applied Research Inc. / Toronto, ON

Activities Created a command-line Java application for transcribing handwritten World War I medical records from the Canadian Expeditionary Force (<http://blog.muninn-project.org/node/79>) using Amazon's Mechanical Turk crowdsourcing service: pre-cut images for groups of lines, redundancy between workers, artificially-introduced mistakes and edit distances to detect cheating, and feedback to workers

03/2013 – 07/2013 Txtmrkt, a marketplace for digital publications / New York, NY

Activities Designed and implemented a Model-View-Controller-based Java web application with Guice-injected microservices backed by Amazon S3

Authenticated and authorized users with Shiro

Integrated co-branded order placement and payment notification with Amazon's Flexible Payments Service

12/2011 – 06/2012 Haystack business intelligence platform for Grokio, LLC / New York, NY

Activities Designed an agent (Python) and manager (Java with Spring Security+MVC and Guice) architecture for gathering, storing, and querying time series data and metadata

Implemented time series databases from scratch using relational tables and memory-mapped files

Wrote RFC 3986 grammar-based URL and URN parsers using Ragel (Java) and pyparsing (Python)

Generated service interfaces in Java and Python with custom Protocol Buffers compiler plugins

Coded agent plugins in Java and Python for discovering and fetching metric metadata and data:

- Open source monitoring systems: Nagios, Ganglia, collectl, Graphite
- Open source server software: Apache httpd, nginx, MySQL, memcached, MongoDB, JMX
- Platform interfaces: procfs, sysctl, WMI, SNMP
- Third party APIs: Google Analytics, MailChimp, Spring Social, Amazon CloudWatch

Supervised user experience and graphic designers in Ukraine

Implemented a client-side user interface with the Google Web Toolkit, starting from wireframes:

- Architectural best practices: Model-View-Presenter; event bus; activities and places
- Custom widgets: date time range picker, cell table pager, search box, selection tree
- .war deployment to Tomcat with Maven

- 08/2011 – 12/2011 Backend development and software architecture for Birchbox Inc. / New York, NY**
 Activities Designed, implemented, documented, and successfully deployed warehouse integration code in Java (backend) and PHP (administrative frontend)
 Wrote a Thrift compiler and targets in Python+py parsing to generate Java and PHP from Thrift definitions
 Produced ad hoc business reports from MySQL using Java and Jython
- 05/2011 – 08/2011 Benchmarking server stacks in order to provision EC2 instances at Chartbeat Inc. / New York, NY**
 Activities Synthesized a realistic benchmark for front-line web servers from statistical analyses of nginx access logs
 Significantly reduced network bandwidth and latency on production servers with targeted optimizations
 Wrote Python scripts for analyzing Ganglia RRDs, replaying HTTP request streams, harnessing httpfs
- 10/2010 – 04/2011 File I/O library for X10 at IBM Research / Hawthorne, NY**
 X10 is a type-safe, parallel object-oriented language for high-productivity computing.
 Activities Designed, implemented, tested, and documented a new low-overhead, buffer-based file library for X10:
 • inspired by POSIX, FUSE, Boost.Filesystem, and Java NIO.2
 • X10 and native code for the Java and C++ source-to-source compilation backends
 • Scatter/gather I/O, aligned buffers, memory-mapped files, advisory locking
 Microbenchmarked the X10 runtime
- 01/2009 – 07/2010 LXFS: fast and reliable data storage for computing clusters, for NEC HPCE GmbH / Stuttgart, Germany**
 Activities Wrote Python and bash scripts for configuring, deploying, and administrating LXFS installations: Lustre and Inet configuration (MGS, MDS, OSS, clients); redundant NFS exports; Nagios, Ganglia, and collectl monitoring; Heartbeat/Linux-HA services for failover; Promise RAID devices; network interfaces (Infiniband, bonded Ethernet)
 Finished two major LXFS releases, used in numerous deployments
 Debugged and resolved issues in production parallel file systems
- 01/2009 – 07/2010 XtreamFS: a distributed and replicated file system for WANs, for NEC HPCE GmbH / Stuttgart, Germany**
 Activities Designed, implemented, and tested the XtreamFS userspace client:
 • FUSE and Dokan (Windows FUSE-like library) interfaces
 • Multiple pipelined ONC-RPC streams to a single server
 • Staged, event-driven concurrency for robust performance under load
 • Close-to-open file caching with per-file page sizes
 • Automatic failover between file replicas on timeout
 • Heavily benchmarked under different I/O loads (iobench, dbench, metadata benchmarks)
 Finished two major XtreamFS releases, both used in production
 Collaborated with academic and industry partners in Europe, Israel, and China

Teaching Experience

- 02/2014 – 04/2014 SQL Fundamentals and Python Fundamentals workshops for Ph.D. students and post-doctoral researchers in the natural sciences**
 Iowa State University / Ames, IA
- 01/2002 – 05/2004 Technical supervision of Masters' theses**
 Oklahoma State University / Tulsa, OK
- 01/2002 – 03/2002 Mathematics tutoring for 6th and 7th graders**
 Tulsa Public Schools / Tulsa, OK