

Lance Gatlin**Senior Software Engineer**

541 10th St NW #442
 Atlanta, GA 30318
 (757) 287-7669

lance.gatlin@gmail.com

<http://lancegatlin.org/tech>

<https://github.com/lancegatlin>

<https://github.com/S-Mach>

SKILLS PROFILE

Agile, Akka, Akka-Streams, Akka-Http, Ansible, asynchronous programming, AWS, Bash, Cassandra, CentOS, Centurion, Chef, ConductR, Docker, Elastic Search, functional programming, Git, Grafana, Graphite, H2, Haskell, HTML/CSS, IntelliJ IDEA, JSON, Java, JavaScript, Jenkins, Jira, Kafka, Kibana, Kubernetes, Linux, Maven, MySQL, MongoDB, Nagios, Play framework, PostgreSQL, Puppet, reactive programming, REST, RHEL, Ruby, SBT, SOA, SOAP, SQL, SVN, Scala, ScalaJS, Slick, Ubuntu, UML, Web Services, WSDL, WSO2, XML Schema, XSLT

EMPLOYMENT HISTORY

Senior Software Consultant, owner S-Mach, Inc. [<https://s-mach.net>]

Apr 2016-Apr 2017

Verizon Wireless: SOCO pre-paid cellphone ETL, business rules engine and daily summary process tech refresh [<https://verizonwireless.com>]

- Architected and implemented SOCO-PP tech refresh using Scala, Akka Streams, Kafka and Oracle for cloud deployment, high-throughput, scalability and high-availability. SOCO-PP processes \$5 billion in yearly revenue, 3TB daily and 500 million events per day
- Pioneered new Scala techniques to overcome difficult requirements: 1) No business requirements only code 2) Extremely wide data sets (~400 columns) 3) Output must go to Oracle 4) No changes to Oracle schema 5) Output must match 100%
- Created Scala DSL for porting existing C business rules engine to Scala that preserved imperative & mutable C-style but isolated this code in a single pure method. Preserving C-style allowed new code to be easily compared to legacy making code review and debugging reasonable
- Established a "data correctness" QA program to compare, measure and refine matching output between new and old code. Process allowed team to isolate, fix and prevent regression of ~200 data mismatch issues eventually increasing accuracy to 99.9999%
- Built parser generator framework for auto-generating Scala code to parse all old and new versions of incoming binary using fastparse parser combinator library
- Setup "build and release" pipeline including common SBT settings plugin & ScalaJS cross compiling for common artifacts using Jenkins and ConductR
- Designed and implemented distributed and scalable summarization process using Kafka, H2 and Oracle with optimized dynamic SQL using in-place updates, skipping columns not requiring update and optimistically updating or inserting
- Created operations dashboard using ScalaJS, Akka-Http, Akka-Streams and WebSockets
- Assisted with cloud-based Devops infrastructure using RHEL 7, Docker, Ansible, ConductR, Elastic Search/Kibana for logging and Grafana/Graphite/StatsD for metrics

Senior Software Engineer, Berkshire Hathaway Energy

Mar 2015-Apr 2016

Intelligent Energy Solutions [<https://intelligent-es.com>]

- Designed, developed and integrated back-end user services using Scala/Play for general token-based authentication using an asynchronous (Scala Future) "pico-service" design model that included an RPC framework for quickly creating client/server DI-injected service stubs
- Architected user name data migration plan to convert users from house-number-as-username to email-as-username to support mobile application integration, multi-tenancy and to reduce password reset requests to the customer service desk

- Developed custom Reactive Mongo mutagen code in Scala for automatically migrating data to new format when a new release of the application is deployed with support for rollback on failure
- Rebooted IES Scrum and Agile process to help the team better connect with management and business priorities, administrated JIRA and operated as scrum master
- Architected push-button releases with Jenkins integration to generate and deploy all required Docker containers by creating a custom sbt-gitflow-plugin, refactoring existing SBT build files, integrating with SBT native packager plugin and creating a custom version of Centurion in Ruby
- Spearheaded testing initiative: interviewed programmers and stakeholders to build a complete feature list, wrote testing plan for features, installed webcams to allow remote viewing of test devices, personally tested and vetted release candidates, refactored code for proper DI to allow writing integration tests, wrote initial integration tests, trained first manual QA tester

Software Consultant, owner S-Mach, Inc. [<https://s-mach.net>]

Apr 2013-Mar 2015

Altisource Labs: Compute Cluster for the Mortgage Industry [<https://www.altisource.com>]

- Contributed to Arthur Framework (AF), a high-performance, distributed, horizontally-scalable and fault-tolerant business application framework for concurrent updates to 10s of millions of mortgage accounts. AF is written in Scala utilizes Akka Actors and runs on the JVM tech-stack. AF embraces design patterns from Domain Drive Design (DDD), Command Query Responsibility Segregation (CQRS) and Event-sourcing (ES)
- Designed and implemented extensible monitoring and metrics for AF
- Trained initial AF adopters and acted as advocate and liaison for other Altisource teams

Travel Syndication Technology: White-label travel booking engine [<https://www.tstllc.net>]

- Architected and developed 25 step ETL process in Scala for automatically retrieving, cleaning and mapping hotel data from TST's many (8+) hotel data and booking partners. ETL reduced 1.2 million input hotel records to 180k unique hotels with automatic selection of best data available
- Wrote a custom Scala-based string similarity and deduplication library which reduced duplicate hotel data records from 25% of records to <1% of records (w-shingling + MinHash)
- Created the TST hotel identifier issuing algorithm that stabilized hotel identifiers despite changing hotel mappings from noisy and sometimes incorrect provider data
- Designed and implemented Scala-based APIs for provider credentials and currency exchange rates
- Recruited, vetted and trained 5 interns in Scala and placed 2 with TST

Software Engineer, Georgia Tech Research Institute (GTRI) [<https://gtri.gatech.edu>]

May 2010-Apr 2013

Congestive Heart Failure Health Initiative: Shared Services Project

- Researched, integrated and deployed WSO2 API Management and BigData cloud services with Georgia Tech authentication technology stack to store and securely share patient sensor data

National Information Exchange Model (NIEM) [<https://niem.gov>]

- Developed Scala-based state machine, enumerator & iteratee open-source library
- Developed Java/Scala-based NIEM & XML Schema parser/generator & conversion open-source library
- Wrote Puppet configurations for managing server configuration and deploying applications

US Joint Forces Command: Command and Control Core (C2 Core) Model [<https://c2core.gtri.org>]

- Authored web-delivered C2 Core developer training articles, code examples and tutorials
- Developed PHP-based training website utilizing MediaWiki with extensions
- Trained C2 Core customers and authored presentation and trainee materials

Customer Trainer , Lockheed Martin [https://lockheedmartin.com]	Nov 2006-May 2009
<ul style="list-style-type: none"> Instructed and supervised 120+ students in Identification Friend or Foe (IFF) radar system 	
Course Supervisor , U.S. Navy [https://www.navil.mil]	Feb 2003-Jan 2006
<ul style="list-style-type: none"> Instructed 200+ students in Identification Friend or Foe (IFF) radar system Developed and revised curriculum for current and new IFF equipment Supervised 10 instructors, 3 classes with 30 students daily 	
Electronics Technician , U.S. Navy	Apr 1999-Jan 2003

EDUCATION	
Old Dominion University , Norfolk, VA	May 2007-May 2010
<ul style="list-style-type: none"> Bachelor of Science in Computer Science 	<i>Summa Cum Laude,</i> <i>GPA 4.00</i>
Tidewater Community College , Virginia Beach, VA	Jan 2006-May 2008
<ul style="list-style-type: none"> Associate of Science in Computer Science 	<i>Summa Cum Laude,</i> <i>GPA 3.93</i>

VOLUNTEER	
Atlanta Scala Meetup Organizer , Atlanta, GA	Feb 2015-Present
Presentation: "Thinking monadically" [https://goo.gl/6Mvsd1]	Atlanta Scala Meetup Aug 2015

OPEN SOURCE	
"effectful" services [https://github.com/lancegatlin/effectful-demo]	180 commits
A demonstration Scala library for "effectful" services, monad-generic service trait and service implementation class that can be used with any monad or nested monad combination without code changes to the trait or class.	21,104 ++ 15,777 --
s-mach.concurrent [https://github.com/S-Mach/s_mach.concurrent]	183 commits
An open-source Scala library that provides asynchronous serial and parallel execution flow control primitives for working with asynchronous tasks.	20,651 ++ 10,280 --
s-mach.datadiff [https://github.com/S-Mach/s_mach.datadiff]	59 commits
An open-source data difference engine for Scala.	7,560 ++ 4,595 --
s-mach.validate [https://github.com/S-Mach/s_mach.validate]	68 commits
An open-source Scala library that provides methods for easily building reusable, composable and serialization-format-agnostic data validators.	4,519 ++ 2,139 --