

# Charles Donaldson

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## Summary

### Software Engineer

### Scala Functional developer

### Software Architect

- A software engineer with 10+ years in back-end services written in Scala, Play framework, cats, and fs2.
- I have 10+ years of experience in back-end API design and implementation.
- Utilized event messaging in a pub/sub topology using Kafka
- Experienced in distributed services using API sequencing or event driven models.

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## Skills

Agile practices

Algorithms

AWS infrastructure

Back-end / Front-end  
technologies

Code base management   Docker

Shell scripting

System design

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## Work History

[Travel Syndicated Technology \(TST LLC\)](#), Alpharetta, Georgia

Feb 2020 to current

Focusing on providing world class travel technology solutions to our customers in an effort to significantly improve look-to-book ratios and maximize revenue. Benefiting travel agencies, consolidators, member organizations, or other entities looking to sell all types of travel online including air, car, hotel, cruise, or tour packages

### Software Engineer

Recruited to apply my skills and understanding of Scala, Akka, and Kafka to the cruise inventory data-load service. The team was re-organized resulting in my role becoming more maintenance in nature resolving booking synchronization issues and payment status transparency.

- Refactored significant portions of the cruise services while adding behavior driven design test to insure continued expectations during code cleaning and avoid regressions
- Became a key source for book and post booking cruise operations.
- Defined booking and post booking enhancements and processing for transparency of payments status and booking recovery to TST customers and consumers
- Scrum master role coordinating Product owner, team members expectations, and team load.

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Scala, Play, concurrency, async API | Twirl, JavaScript | Docker

Empowering companies to monitor shifts in consumer and market demand and rapidly respond with highly-targeted strategies.

### Software Engineer

Hired to work on a new product offering to provide easier access - a gateway - to the powerful analytics available in the 1010data database engine. This new user tool provided spreadsheet and graphical views as incremental processing steps are applied to ingest, transform, and analyze their data. I provided an end-point to upload multi-gigabyte files via a chunking process and injected per the 1010data database API. Integration of this process identified database API restrictions which lead to implementing an AWS S3 chunks and aggregations process where the database was able to ingest from an S3 key. Implemented additional services to support the communication, validation, aggregation and interfacing between UI, service databases and the 110data engine.

- Utilized AWS S3 SDK to provide a set of signed S3 indexes for use by the browser that was aggregate together once all segments were uploaded
- Utilized JavaScript file splitting and uploading in a batched process that managed browser memory and CPU resources
- Provided a workflow that allowed the user to continue working with the first slice as their sample data during worksheet-like step
- Entered the multi-stack camp using Vue, Vuex, and TypeScript
- Championed the integration of TypeScript that reduced type bugs
- Presented company tech talk on Scala Future, Collections, For Comprehension, Type Class

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Scala, Play, AWS SDK | VueJs, JavaScript, TypeScript | AWS: EBS, EC2, ELB, S3

Powering a smart, connected world. The company's leading hardware, software and services transform the way that people and businesses stay informed, entertained and connected.

### Software Engineer

Moved into this role to advance the distributed tiered topology to configure, manage, and propagate streaming video meta data. This was a shift into the Scala language using cats, FS2, and Kafka. This is an eventual consistency system with the types and rates of the messaging.

- Migrated the code base to Java 1.8 and Scala 2.10 gaining performance and library improvements
- Augmented and refined Avro messages, their processing through Akka Streams, and pub/sub via Kafka.
- Active participant in product planning and sprint grooming with product owners.

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Scala, Cats, FS2, Akka, Kafka, concurrency, async API | BitBucket, Bamboo | VMWare

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### System Integration and Test Automation and Tools Engineering

The achievements obtained in the prior role as Integration and Test Automation engineer were applied across the division and a large variety of products via a set of servers running images of the automation tool configuring racks of ARRIS products and test equipment. All being managed from a central web app to schedule tests, present status, generate reports.

- Architect and Lead of a team of 10 engineers – 6 offshore and 4 US - developing the services to facility concurrent product qualification testing.
- Developed scalable automation framework for single product to multiple product testing – racks of connected products.
- Utilized C/C++/Python with persistence to monitor and execute test automation.
- Utilized Visual Basic .Net with MS Web server to configure test scheduling, status, and present results.

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C++, Python, VBasic | VBasic SSR | COTS servers, Windows Servers, company hardware

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### System Integration and Test Automation Engineer

Moved into this role to improve product release schedules and development iteration feedback via tools and scripts to automate test configurations, data collection, results reporting.

- Utilized LabVIEW and TestStand automation to achieve significant time savings
- IGMP testing decreased from 40 Hours to 3 hours.
- Transport Redundancy decreased from 80 hours to 19 hours.
- Device configuration decreased from hours to minutes.
- Implemented proprietary Wireshark protocol dissectors for headend and SDV operational diagnostics.
- Defined and administered the IP infrastructure for a multi-gigabit multi-router Ethernet video network using Cisco and Force10 Network switches leveraging OSPF, PIM SSM, BSR, and multiple rendezvous points for efficient transport.
- Wrote set top box channel change simulation tool for switched digital video load testing.

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C++, LabVIEW, TestStand | COTS servers, networking hardware, company hardware

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## Education

Lafayette College, Easton Pennsylvania  
Bachelors in Science for Electrical and Computer Engineering