

Dimitar Georgiev

Software Engineer

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Summary

Software engineer with experience in multiple roles and technologies, currently focused in the area of typed functional programming. Proven track record delivering projects and services of high complexity in accordance with business requirements and without need of technical guidance.

Has successfully designed, delivered and operated production systems based on a purely functional architecture.

Solid working knowledge of the purely functional subset of Scala, the typeclass hierarchy and surrounding technologies built on top of the cats / cats-effect / fs2 libraries.

Very well versed in server-side programming, HTTP, JVM platform. Good working knowledge of cloud platforms, infrastructure as code tools, message-oriented middlewares, RDBMS, continuous delivery tools, and observability / monitoring / alerting tools.

Has served as technical lead on numerous projects. Can produce architecture, designs, and technical specification, and provide work breakdown and status reporting to project / product leadership.

Passionate about robustness, automated testing, observability, and operating software in production.

Work experience

Senior software engineer, Technical lead

05.2021 - 08.2024

HSS ProService (Contract), AnyJunk (Contract)

Served as Senior Scala engineer and squad lead on a project of high business complexity. Contributed to and improved very large Scala codebase based on cats, akka and monix. Delivered projects in the areas of product and contract management, finance, invoicing, payments processing and integration. Designed and led the development of a new search service based on cats-effect, fs2, http4s, OpenSearch and Kafka, which provided 10x-100x improvement of search performance over tens of millions of products, and provided observability into the system (HoneyComb / Natchez), aiding in production operation and further performance improvements. Participated in continuous improvement of system architecture, production support, incident response and release planning. Rolled out production deployments on a daily basis with no disruption to business and users. Worked closely with CTO, CPO and the business squad in order to align the technical work with overall business objectives and constraints.

Senior software engineer

10.2020 - 04.2021

Sentiment Bulgaria Ltd.

Was responsible for development and support for all Scala services of Sentiment's offering (<https://sentiment.io>). Implemented a continuous integration and continuous delivery system on top of Bitbucket Pipelines, Ansible and System D. Designed and implemented new service providing Twilio integration into their offering.

Software engineer

07.2018 - 08.2020

OVO Energy / Droxic Ltd.

I was commissioned to work with the <https://www.boostpower.co.uk/> team, which provided OVO Energy's smart pay-as-you-go gas & electric offering. As a backend engineer on that team, I was responsible for architecture, design, development, infrastructure provisioning, monitoring, operation and incident response across a multitude of services. The team utilised purely functional architecture to deliver robust solutions within limited timescales and resources, and had a strong focus on automation of the whole development lifecycle, monitoring and production operation.

The majority of the services were implemented in Scala utilising cats, fs2, http4s, fs2-kafka, doobie, and other fs2-backed libraries. The software ran on GCP / GKE and AWS and its infrastructure was provisioned via code. Because of the constant flow of new product requirements, the team deployed changes to production multiple times per day.

Software architect / Technical lead / Software engineer

2.2013 - 06.2018

Novarto LTD

Novarto Ltd. is a SAP CRM and E-Commerce Consultancy based in Bulgaria. As an architect, tech lead and developer in the company, I was involved in collaborating with customers and partners, technology assessment, constraint identification, high level design, development, quality assurance, release engineering, development operations, production support, serving as technical lead on a team, and mentoring. My main focus was in the area of building E-Commerce and bespoke applications on top of the JVM platform, using proprietary as well as open-source technologies.

Expert Developer (last position held)

2.2008 - 2.2013

SAP Labs Bulgaria

Was tasked with implementation, architecture, design, quality assurance, user acceptance testing, continuous processes improvement, and mentoring. My main focus areas were Enterprise Application Integration tooling (SOAP, SCDL, OSGI); Java EE tooling; business processes intelligence.

Key Skills

- Expertise in typed, purely functional programming
- Using the type system to arrive at robust code
- Developing, provisioning and continuously operating software in production
- Problem analysis and breakdown, constraints identification, assessment of viable technology stacks
- Providing architecture, technical design, work / task breakdown and technical documentation
- Continuous improvement of existing software systems
- Property-based testing; unit, integration and system testing
- Build, Infrastructure and release automation
- Observability, monitoring, performance measurement and optimisation, load testing
- Solid communication skills; Interfacing and negotiating with Business, project leadership and customers

Techologies

- Scala 2 and Scala 3 - 11 years of experience, 7 years of production experience in the purely functional subset of Scala
- Java and JVM platform
- Solid understanding of the cats library and the typeclass hierarchy
- cats-effect, fs2, http4s, fs2-kafka, skunk, doobie, circe, refined, iron, natchez, ciris and various others
- Working knowledge and production experience with akka and akka-http; past experience with Netty, with focus on HTTP and h2 protocol
- ScalaTest, Scalacheck, weaver-test, JUnit, JMH
- PostgreSQL, MySQL; Google Cloud SQL, AWS RDS
- Elasticsearch / OpenSearch
- Google Cloud Platform, Google Kubernetes Engine, AWS
- AWS CDK, Ansible, Terraform, Helm
- Honeycomb, InfluxDB, Grafana, DataDog
- Build and CI tools - SBT, Gradle, Maven, GH Actions, CircleCI, Jenkins, Travis. Vast experience setting up and maintaining builds of high complexity.
- Load testing - h2load, tsung, Gatling
- Java Mission Control, JFR
- Good working knowledge of *nix based operating systems; experience with NixOS
- Preliminary experience with Haskell
- Past experience with functionalJava, functionaljava-quickcheck; RxJava; EcmaScript 6, Typescript, Flow.js; Immutable.js; React.js; Kotlin

Open source projects

<https://github.com/dimitarg/weaver-test-extra>

A minimal purely-functional API for authoring tests using `weaver-test`

<https://github.com/dimitarg/taftotita/>

Explorations of system design in Scala 3

<https://github.com/novarto-oss/sane-dbc>

A principled library for interacting with RDBMS in Java in a robust manner, while reducing boilerplate. Used in production.

<https://github.com/novarto-oss/jackson-module-fj>

Java project that adds Jackson serialization / deserialisation support for FunctionalJava immutable data types. Comes with property-based tests to verify correctness. Used in production

<https://github.com/novarto-oss/java-build-conventions>

Gradle tooling to eliminate boilerplate in Java builds.

Articles (shortlisted)

"The joys of messaging without a message bus", Feb. 2025

<https://dimitarg.github.io/joys-of-messaging/>

Explores the process of building a message-oriented middleware on top of PostgreSQL and Scala

"Purely functional testing in Scala", Sept. 2020

<https://dimitarg.github.io/pure-testing-scala/>

Outlines a ready-to-use approach for authoring tests in Scala in a referentially transparent manner, and explores advantages and consequences to it.

Proprietary projects (shortlisted)

Product search service

Search service which provided 10x-100x improvement to latency over the existing solution. Built on top of Elasticsearch / OpenSearch, Kafka and PostgreSQL. Libraries utilised were http4s (ember), skunk, fs2-kafka, elastic4s, ciris, natchez. Used honeycomb.io to provide deep observability into the service.

Boost Winter Wallet

I was part of the team that created Boost Winter Wallet, which helps pay-as-you-go customers to save funds to deal with increased energy usage during winter.

<https://www.thedrummarketingawards.com/the-drum-marketing-awards-2020/new-product-or-service-launch-strategy-of-the-year/boost-winter-wallet>

Product mastering / Product catalog modeling / Online product catalog system

Dates: 2014 - Jun 2018

An ACID system for master data and product / catalog modeling with support for data inheritance, configurable products and an extensible rules engine. Can publish data to multiple sources. Can cope with vast volumes of data. Can be deployed on-premise, in the cloud or utilizing a hybrid model.

Various B2B and B2C E-Commerce implementations for SMEs as well as Fortune 500 customers

Dates: 2013 - Jun 2018

I've worked on various E-Commerce implementations, usually with complex integration requirements. Some of these projects utilize platforms from the SAP portfolio, such as Hybris, WCEM and ISA; others are bespoke solutions integrated with existing backend systems.

Education, training and certification

Oracle Certified Java Professional

Cambridge ESOL Certificate in Advanced English

Functional Programming Principles in Scala – Accomplishment with Distinction

Baba Tonka Secondary School of Mathematics, Ruse, Bulgaria, 2006