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DoB:	9th October, 1987
Nationality:	British Citizen/Irish Citizen Japanese Permanent Resident
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Education

Trinity College, University of Cambridge, 2005-2009

MMath (formally awarded Nov 2010), Certificate of Advanced Studies in Mathematics, 2009

M.A. Mathematics with Computer Science, 1st/1st/1st, 2008 (formally awarded 2009/2012)

Summary

15 years of professional Scala experience; substantial experience in Java, Kotlin, and Python. Working knowledge of Typescript and several other languages.

Contributor to Shapeless, Scalaz, Armeria. Experience with ZIO, Caliban, ReactJS, Cats, Http4s, Circe, Akka, Thrift, Protobuf, Spring, Hibernate, JUnit, ScalaTest, EasyMock, Mockito, and integrating with Cassandra, Kafka, HBase, Redis, MySQL, PostgreSQL, Oracle, H2, Zookeeper. Familiarity with IntelliJ, Maven, SBT, Gradle, Git, Dagster, Sentry, New Relic, AppDynamics, Datadog.

Familiarity with Linux, Windows, BSD; Kubernetes, Terraform, and Puppet. Experience with AWS.

Employment

Goodcover, Software Developer / Consultant (contractor), May 2022 - August 2024

Performed full stack system development including server- and client-side code, data, operations, and release management. Maintained insurance product and expanded to support most US states; built data pipeline using Spark Streaming, Dagster, and Metabase.

LINE, Senior Software Engineer, May 2020 - May 2022

Lead developer on location platform; implemented realtime geofencing and PoI enter/exit detection with careful regard to user privacy requirements. Maintained core messaging platform, proceeded with migration of non-core services to appropriate secondary components, and introduced distributed tracing and real-time latency monitoring to support this. Wrote for company engineering blog.

Paidy, Data Engineer, December 2019 - February 2020

Made urgent business changes (including full release and deployment cycle) within a strictly functional codebase, making use of “final tagless” style based on cats-io and http4s with circe. Introduced Datadog APM/tracing for clearer performance monitoring and visualisation (flame graphs).

Morgan Stanley, Java/Scala Developer (contractor), July 2015 - July 2019

Developed Kafka-based framework for managing batch processing tasks. Used Shapeless and typeclasses to ensure framework was decoupled from implementation-specific pieces; introduced functional patterns (e.g. Iteratees, free monad, monad transformers, typeclasses with dependent types) via internal library and blog posts, specialised as appropriate. Introduced agile process elements to improve delivery.

VisualDNA, Developer, June 2014 - July 2015

Worked on "big data" analytics for credit scoring; took responsibility for process improvements and teamwide skill development, as well as full-stack technical delivery. Used Spray for reactive web services, and both Spark (including spark-streaming) and Scalding for big data work. Introduced Thrift/Scrooge for structured RPC, Hibernate/JPA/QueryDSL for managed low-boilerplate database access, with compile-time transaction safety via a monadic approach in pure Scala. Formalized and improved team testing/release workflow to improve turnaround time while maintaining quality.

Optim.al (later Brand Networks), Senior Developer, March 2013 - June 2014

Maintained and enhanced a dynamic social media marketing platform and associated tools. Second UK employee - full-stack responsibility including frontend, backend services, database - design, implementation, deployment, infrastructure. Worked mostly in Scala with some Typescript, Python, and Java. Used Spray for web services; frontends were initially Wicket and later Angularjs; one side piece used Django. Used Fabric and Chef for deployment (on AWS), Selenium-based integration tests and New Relic monitoring.

Ri3k (later Qatarlyst), Developer, August 2011 - March 2013

Developed an insurance trading platform, writing primarily Scala. Made use of Wicket, Jersey and programatically-configured Spring. Took responsibility for the build environment, ensuring we had a fast, automated release and deployment process so that we scould work more agilely.

Last.fm, Java Developer, April - July 2011

Worked in last.fm's Java team, mainly improving scalability of the music streaming infrastructure, replacing PHP code with Java services accessed via Thrift. Used both traditional multithreading and event-driven parallelism. Improved build and deployment infrastructure (introducing Maven), and worked on a new lightweight monitoring graph webapp, using Scala, Wicket, JMX. Also made some use of Hadoop (MapReduce).

MX Telecom (later OpenMarket), Software Engineer, October 2009 - April 2011

Maintained and developed an integrated mobile services platform. Used message passing model for resilience and concurrency; load tested the system in preparation for a superbowl advert and improved monitoring. Introduced the JSR166 fork/join concurrency framework (now part of Java 8) for concurrency to improve site performance; also introduced Scala on an experimental basis.

Introduced binary compatibility checking for our internal RMI interfaces, PowerMock, spring-test, jasmine (behaviour-driven javascript testing), and automatic test coverage reporting; contributed to selenium functional tests for the web UI, and wrote the first dedicated integration tests for the client-facing XML API. Introduced JSR308 compile-time nullness checking.

Personal projects

Tierney (https://github.com/m50d/tierney): Hybrid Free monad/applicative structure, for Free-monad style use cases with very explicit control over parallelism, implemented with a higher-kinded variant of recursion-schemes/matryoshka style. Built on cats.

Paperdoll (https://github.com/m50d/paperdoll): Implementation of the free monad coproduct pattern for Scala, allowing very generic functional composition of contexts/effects, so that programs can track their effects explicitly but without the complexity of a monad transformer stack.

Deliciouslie (http://m50d.github.com/deliciouslie/): DI framework for Scala using type-level programming (built on Shapeless).