Daniel Dietrich

Curriculum Vitae

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[*Read the résumé version* at https://resume.danieldietrich.dev]

Summary

Daniel is a highly motivated Senior Software Engineer, Open Source Community Leader and Author with 18+ years of experience.

He is a skilled lead engineer and architect with distinct analytical skills. He designs software architectures and integrates systems from a high-level perspective, his portfolio ranges from the design of web and user interfaces to middleware, infrastructure and databases.

Daniel also has an eye for the detail. He is a passionate API designer and enthusiastic about clean and robust code. He collaborates with developers around the world on the GitHub platform and is sharing his knowledge by writing articles and books. His most visible open source project is Vavr, a popular library for functional programming in Java.

Daniel is intrinsically motivated to learn new languages, frameworks and technologies. During the last years, Daniel mainly focused on React and TypeScript for frontend development and Node.js and Java on the backend.

Daniel has a creative vein and a fondness for web design. Currently, he uses tools like Adobe Creative Suite, Figma and TailwindCSS to design responsive applications for the web and mobile devices.

Daniel loves to spend quality time with his wife and their five children. When he turns the computer off, he likes to ride one of his bikes or relaxes after going to the gym.

Professional Experience

2014

Open Source Project Leader, Vavr *(formerly Javaslang)*.

- Reified the vision of being #1 project for functional programming in Java. Built a vibrant international community and a network of open source developers and sponsors.

- Designed an API for Haskell- and Scala-like algebraic data structures in Java (Functors, Applicatives, Monads). Implemented a complete set of persistent collections. Simplified concurrent programming.

- Wrote online documentation and components for code generation and automated testing on top cloud infrastructure.

Keywords: *Vavr, Functional Programming, Java, Scala, GitHub, Open Source*

Senior Software Engineer, *Hamburg Commercial Bank*, Kiel/Hamburg.

(*most relevant projects only*)

○ *Microservice Integration Architecture for Capital Markets IT (2019-2020)*

Role: Senior Lead Software Engineer

Designed and implemented a Capital Markets data access layer based on Open API/spec first, incl. security. Implemented an OAuth2 server and adapted it to the in-house Corporate LDAP. Team collaboration creating services with Spring Boot including API gateway, service discovery and load balancing. Wrote deployment and release automation scripts for an in-house infrastructure. Wrote developer guidelines and shared the knowledge with my team. Adapted the services to existing systems in a hetorogenous landscape, like OneSumX and Cloudera.

Keywords: *Oracle, SQL, Spring Boot, Java, Python, Shell, OneSumX, Cloudera*

○ *Digital transformation of the Know Your Customer onboarding process (2018-2019)*

Role: Senior Lead Software Engineer

Analyzed and designed the KYC onboarding process. Implemented an event-driven frontend in React and TypeScript that reflected updates of the onboarding process in real-time. Implemented a backend in Node.js with a CouchDB that concurrently collected private company data from 3rd party services like Bureau van Dijk/Orbis and the Germany Commercial Register. Trained junior developers to maintain and enhance the application.

Keywords: *CouchDB, NoSQL, React, TypeScript, Node.js, JavaScript*

○ *Blockchain based trading platform for bonded loans (2016-2018)*

Role: Senior Software Engineer

Worked with an interdisciplinary team of German banks on the architecture and implementation of a trading platform for bonded loans, called finledger. Solved backend data synchronization challenges in a distributed, eventually persistent architecture with private data portions per bank. Created a frontend with React, TypeScript and Ant Design. Implemented the backend with Spring Boot and the Ethereum blockchain.

Keywords: *Ethereum, React, TypeScript, Node.js, Spring Boot*

○ *Migration of a pricing framework from C# to Java (2015-2016)*

Role: Project Manager

Set up the project and designed a functional calculation core in plain Java. Trained the project team of financial engineers in functional programming in Java. Reimplemented with the team all pricers and adapted them to the Calypso trading system. Met the requirement of producing exactly same results while pricing big portions of the bank portfolio in a given time frame on a daily basis.

Keywords: *C#, .NET, Java, Calypso*

○ *Creation of a Calypso risk instance (2012-2015)*

Role: Senior Software Engineer

Collaborated with a team of ~20 developers to created a risk instance of the Calypso trading system. My part was the design and implementation of an event bus for sharing end of day and neartime data with external systems.

Keywords: *Calypso, Java, Enterprise Integration, FpML*

○ *Workflow automation of Credit Risk- & Loan and Collateral Management (2011-2012)*

Role: Project Manager

Digitally transformed the workflow between two business units with IBM WebSphere Process Server on the backend and SAP WebDynpro for Java on the frontend.

Keywords: *IBM WebSphere, SAP WebDynpro, Java*

2008
2008

Software Engineering Consultant, *Gentleware AG*, Hamburg.

○ HSH Nordbank AG: *Middleware for booking final taxes (2008)*
Role: Software Engineer
Design and implementation of an enterprise middleware based on distributed transactional queues for passing payments and final taxes to multiple (external) systems.
Keywords: Weblogic Server, IBM MQ, Java EE

2002
2007

Software Developer, *b+m Informatik AG*, Kiel/Melsdorf.

○ HSH Nordbank AG: *Web application for compliance (2007)*
Role: Software Engineering Consultant
Created a Java client/server application to support compliance.
Keywords: Weblogic Server, Java EE, JSF, Struts, Tiles

○ UBS Germany: *Reimplementation of the asset management system (2006)*
Role: Software Engineering Consultant
Consultancy, requirement analysis and reimplementation of the asset management system. Integration of business logic distributed over a Java application and Oracle PL/SQL.
Keywords: Business Process Optimization, Model Driven Software Development

○ *Creating a loan calculator (2006)*
Role: Software Developer
Created an amortization plan calculator in Java for different loan types. b+m is still selling it as a product.
Keywords: Loan Calculator, Java

○ *In-house development of financial products (2004-2006)*
Role: Software Developer
Developed products as part of a big team for the financial sector based on model driven software development and code generation. WebSphere and PostgreSQL on the backend, web browser on the frontend.
Keywords: MDSD, UML, WebSphere, Java, PostgreSQL

○ *Eclipse IDE plugin/language extension (2004)*
Role: Software Developer
Developed an Eclipse plugin for code generator languages that provided syntax highlighting, code formatting and code completion.
Keywords: Eclipse IDE, Plugin Development

2001
2001

Software Developer, *Mobilcom AG*, Kiel.

○ Worked on the online portal, implemented data structures for hierarchically displaying information.
Keywords: JavaScript, Perl, LAMP stack (Linux, Apache, MySQL, PHP)

1998
2002

Student Assistant, *Institute of Medical Informatics and Statistics*, Kiel.

○ Responsible for the computer lab. Gave introductory courses about biometrics for medical students.

○ Used statistics software SPSS and R.

○ Built a multi-user application based on MS Access.

Keywords: Statistics, SPSS, R, Access Database

Technical Skills

Programming languages	TypeScript, JavaScript, CSS, HTML, Java, Scala, SQL, NoSQL, Bash, Python, PHP, Haskell	Others	Git, Maven, Gradle, sbt, npm, yarn, Ethereum, GitHub Actions, Docker, Travis CI, Jenkins, Figma, Adobe Photoshop
Development methodologies	Onion Architecture, Clean Code, GoF Design Patterns, SOLID, Agile Development, SCRUM, Domain-Driven Design (DDD), Test-Driven Development (TDD)	Interest Areas	User Experience, Design, Functional Programming, Distributed Programming, Artificial Intelligence, Deep Learning, Blockchain, Kubernetes, DevOps

Articles and Books

2018 **Article "Das Beste aus beiden Welten - Objektfunktionale Programmierung mit Vavr"**, *Java magazin, 20th anniversary edition*, Author of the month.

2018 **Article "Web3j, Blockchain und Klimawandel"**, *Entwickler Spezial Vol. 18*.

2016 **Book reviewer "Reactive Programming with Scala and Akka"**, *Packt Publishing*.

2013 **Book "Instant Play Framework Starter"**, *Packt Publishing*.

Courses and certifications

2019 **Neural Networks and Deep Learning**, *Coursera*, Course certificate.

2015 **Functional Programming in Haskell**, *Delft University*, Course certificate.

2014 **Principles of Reactive Programming**, *Coursera*, Statement of Accomplishment, with distinction.

2012 **Functional Programming Principles in Scala**, *Coursera*, Statement of Accomplishment, with distinction.

2012 **Certified ScrumMaster**, *Scrum Alliance, Inc.*, Course certificate.

Education

1997-2006 **Academic degree "Diplom Informatiker" (equivalent to Master's degree in Computer Science)**, *Christian-Albrecht University of Kiel*, Kiel/Germany.
Final degree dissertation "Generator Debugging im modellgetriebenen Software-Entwicklungsprozess: Architektur und Implementierung"

Languages

German	Mother tongue
English	Fluent