_cofx

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Luc Engelen

Senior full-stack developer and scrum master

Luc is a senior software developer and scrum master that combines a solid theoretical foundation in computer science with practical experience in developing web and mobile applications. He is a full-stack developer, focussing on React-based front ends, cross-platform mobile applications, and Java-based back ends. Before switching to software development, he obtaining his PhD at the Eindhoven University of Technology (TU/e) and worked as a Postdoctoral researcher and teacher at the same university.

His background in academia combined with his practical experience with a range of programming languages and technologies allows him to reason about the big picture while keeping an eye on the details. His experience as a software engineer and scrum master within various companies combined with his experience as a volunteer within various sports clubs gives him an eye for processes and collaboration within teams.

Employment history

cofx - 2022 - present

In december 2022, Luc started working as a freelance full-stack software developer under the company name *cofx*. He has worked on projects for Equans, Engie, and Forescout.

Main technologies: *Java, Spring Boot, AWS, PostgreSQL, MongoDB, Clojure, ClojureScript, Angular, React, JavaScript, and TypeScript.*

APG - 2021 - 2022

At APG, Luc worked as software developer and scrum master. APG is both a pension investment company and a pension administration company. It is a direct subsidiary of ABP, the largest pension fund in the Netherlands.

As a Java-developer, Luc worked on the automation of business processes. These processes are part of the *Generic Pension System (GPS)*, one of the largest software applications at APG. Additionally, his team was responsible for the maintenance of the front-end of GPS, implemented in Apache Flex. He also created internal testing tools and prototypes for the replacement of GPS with Clojure and ClojureScript.

Main technologies: *Java, Spring, Hibernate, Oracle DB, Activiti, Adobe Flex, and Clojure.*

Kabisa - 2016 - 2021

Kabisa is specialized in developing elegant software solutions using technologies such as Ruby on Rails, Java, and Python. Depending on the project and client, Luc worked as backend developer, frontend developer, (hybrid) mobile developer, or a combination of these roles.

Backend: *Java, Python, Ruby, Spring Boot, Vert.x, Flask, Falcon, Ruby on Rails, RabbitMQ, ActiveMQ, Amazon SQS, Amazon Kinesis, Apache Camel, Firebase, MongoDB, PostgreSQL, JUnit, Mockito, Maven, and Gradle.*

Frontend: *JavaScript, TypeScript, React, Redux, Karma, Mocha, Sinon, Chai, Angular, NgRx, Cypress, and Jest.*

Mobile: *Apache Cordova in combination with React and previously Backbone.js.*

Operations: *Docker, Linode, AWS, Jenkins, Ansible, and Terraform.*

ISAAC - 2014 - 2016

ISAAC creates custom web and mobile applications for a number of international customers, often using open-source software as a foundation. Luc worked as iOS developer and Java developer at ISAAC.

Main technologies: *Objective-C, Swift, Java, Java EE, WebLogic, JBoss EAP, Maven, and JUnit.*

Postdoc and Teacher - Laboratory for Quality Software (TU/e) - 2012 - 2014

As a postdoctoral researcher and teacher, Luc performed research in the field of safety-critical software and assisted in teaching a number of courses for BSc students. In addition, he co-supervised a PhD student.

PhD Student - Software Engineering and Technology Group (TU/e) - 2008 - 2012

As a PhD student, Luc performed research in the field of model-driven software engineering and domain-specific languages. Additionally, he assisted in teaching a number of courses for MSc and post-MSc students.

Junior Researcher - TU/e and ASML - 2006 - 2008

In a joint project between the TU/e and ASML, Luc investigated the transformation of UML models to a formal modeling language capable of performance analysis.

Notable projects

Smart O&M - Equans and Engie - 2020 - 2024

Engie is a French multinational electric utility company, which is currently actively developing its Smart O&M platform. Smart O&M is the software that takes care of their clients' building assets in a fully transparent and efficient way. It predicts and tracks breakdowns in the buildings, optimizes operators' rounds and monitors and evaluates contractual commitments.

For Engie, Luc worked as a full-stack developer and back-end chapter lead on a handful of back-end services and two front-end applications. In total, the back end of Engie's platform consists of around 50 microservices that communicate asynchronously via Amazon Kinesis, ActiveMQ, and Amazon SQS, and synchronously via REST.

Main technologies: *Java, Spring Boot, Micronaut, Amazon SQS, Amazon Kinesis, MongoDB, Angular, NgRx, Cypress, Jest, and TypeScript.*

Proof-of-concept applications - APG - 2021 - 2022

To prepare for upcoming changes in legislation, APG wanted to replace part of its pension administration with an external application created by Festina Finance. To demonstrate the possibilities of the new system and its integration with existing software, Luc created a number of proof-of-concept applications.

Main technologies: *Clojure, ClojureScript, Ring, Reitit, HugSQL, HoneySQL, and re-frame.*

Hertek Connect - Hertek - 2019 - 2020

Hertek Safety provides and services systems for fire protection. For Hertek, Luc worked in a team of three on a platform that allows the control and inspection of fire panels via a number of web and mobile apps.

Main technologies: *React, Redux, Cordova, TypeScript, Karma, Mocha, Sinon, Chai, Java, Vert.x, Spring Boot, Mockito, JUnit, Firebase, PostgreSQL, and Amazon SQS.*

Analytics - ASML - 2019

ASML is the world-leading supplier of photolitography machines for the semiconductor industries. For ASML, Luc worked in a team of three on a proof-of-concept application demonstrating the applicability of modern web technologies within ASML.

Main technologies: *React, Redux, TypeScript, Karma, Mocha, Sinon, Chai, Java, Spring Boot, Mockito, and JUnit.*

Map toolkit - Signify - 2017 - 2018

Signify is the new company name of Philips Lighting. Signify is a world leader in connected LED lighting systems, software, and services. Their innovations unlock the extraordinary potential of light to improve the quality of people's lives and to work towards a sustainable future.

Within Signify's indoor navigation department, Luc created a web application for the creation of mapping data. Among other things, this app allows users to define the walkable and non-walkable areas for each floor of a given venue, align technical images and designed maps in the browser, and tiles large images of maps for efficient use on mobile devices. The app produces ready-to-use maps in a proprietary binary format for Signify's indoor navigation SDKs for Android and iOS.

Additionally, Luc and a colleague created a cross-platform mobile application for the Light+Building fair in Frankfurt. This app was used to demonstrate how indoor navigation could assist retail staff during their day-to-day activities.

Main technologies: *Python, Falcon, Pytest, OpenCV, Preact, Redux, Cordova, Webpack, ES6, HTML5 Canvas, Karma, Mocha, Sinon, Chai, Ansible, Terraform, and Microsoft Azure.*

Mooncore - Philips - 2017

Philips is one of the largest electronics companies in the world. Its health watch empowers you to live a healthier life by tracking heart rate and other metrics of your cardio condition, as well as activity, sleep and more.

As a Java developer at Philips, Luc worked on a few of the most mission-critical micro services that power the mobile apps for the Philips health watch. Each micro service is a Spring Boot application, connected to its own PostgreSQL database. The micro services communicate with each other and the outside world via REST APIs and RAbbitMQ.

Main technologies: *Java, Spring Boot, RabbitMQ, PostgreSQL, JUnit, Maven, and Mockito.*

ESB - Euramax - 2016

Euramax coated products is a world-wide supplier of premium coil coated aluminium. Their products are applied in many industries, ranging from buildings and interiors to transportation- and recreational vehicles.

Euramax uses a number of IT systems in their day-to-day operations. To simplify connecting these systems with each other and with external systems of, for example, their suppliers, they were looking for an enterprise service bus. Luc extended Flux, an existing Kabisa product, to suit the needs of Euramax and developed a number of flows that solved an immediate problem that Euramax was facing.

Main technologies: *Ruby on Rails, CoffeeScript, RSpec, Java, Junit, Maven, MongoDB, Elasticsearch, Docker, Linode, AWS, and Ansible.*

GSM-PRO - Conta-Clip - 2016

Conta-Clip is an international producer of electrical and electronic connection technology. Besides being a manufacturer, Conta-Clip services this technology and sells it online.

In a small team of three developers, Luc worked on a hybrid mobile application for Conta-Clip. The mobile application is used to control remote equipment and obtain feedback about the functioning of this equipment. The distinguishing features of this app are communication via

both an SMS-based API and a web-based API, and the possibility to update parts of the app on the fly.

Main technologies: *Maji Mobile (which includes Apache Cordova, Jasmine, Chai and CoffeeScript), Python, and Flask.*

Web Shop - Twin Archer Trading - 2016

Twin Archer Trading is a recent start-up that imports a variety of products from China.

In a small team of three developers, Luc built a business-to-business web shop connected to the product information management system Beeyond. The customer uses Beeyond to manage the products that are offered for sale in the shop. A custom Java application built with Apache Camel is used to synchronize the shop with Beeyond. The shop itself is a Ruby on Rails application.

Main technologies: *Ruby on Rails, CoffeeScript, RSpec, Java, JUnit, Maven, Postgres, Beeyond, Linode, Ansible, and Apache Camel.*

iOS SDK - GlobalCollect - 2014

GlobalCollect was a global payment-service provider that is now part of Ingenico Group's Ingenico ePayments. Ingenico ePayments offers a platform for online payment processing.

Luc worked as an iOS developer on a native SDK that helps iOS developers to connect their apps to the Ingenico ePayments platform. In addition, he created a demo application to illustrate the use of the SDK and wrote its technical documentation.

Main technologies: *Objective-C, Cocoa Touch, AFNetworking, and SVProgressHUD.*

Education

- PhD (dr.), Eindhoven University of Technology (TU/e)
- MSc (ir.), Eindhoven University of Technology (TU/e)
- VWO, Jeanne D'Arc College Maastricht

Certifications

- Professional Scrum Master I
- Oracle Certified Associate - Java SE7 Programmer I
- Oracle Certified Professional - Java SE7 Programmer II
- Certified SAFe 5 Scrum Master

Talks and publications

- Talks at various Meetups and conferences:
    - Clojure for beginners (DevConf, March 2022)
    - Python web development (Meetup, June 2018)
    - Battle of the Java Microframeworks (Meetup, February 2017)
    - JSON Web Tokens (Java Meetup, October 2016)
- Various blog posts on https://blog.cofx.nl/ and https://www.theguild.nl/, including:
    - Experimenting with MongoDB index creation and Spring Boot
    - Dependency injection and loggers in Clojure
    - Browser Beats I: Synthesizing a kick drum
    - Where to put JSON web tokens in 2019
    - Reactive Java using the Vert.x toolkit
    - Jenkinsfiles for beginners and masochists
    - Setting up Dokku on Azure with Terraform and Ansible: a guided tour
    - Good-looking PDFs with CSS for paged media and markdown
- From Napkin Sketches to Reliable Software (PhD thesis, 2012)
- Various scientific talks and publications
- A BDD-based Prover for mCRL2 (Master's thesis, 2006)

Languages

	Speaking	**Writing**
Dutch	Fluent	Fluent
English	Fluent	Fluent
German	Basic	Basic
French	Basic	Basic