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Gender: Male
Nationality: Dutch
Marital status: Single
Birth-date: 26-9-1986



Michiel Helvensteijn

Software Engineer with a PhD in Computer Science
Skilled in all facets of modern Web Development

I value clean code, test-driven development and agile project management.

Professional Experience

- 2017 – ...
- **Senior Software Engineer at Qubit**
I am responsible for developing and maintaining Qubit's full-stack application and microservice architecture. I am also making specific contributions to Qubit's end-to-end testing framework and machine-learning architecture.
[ECMAScript 2015+](#), [React](#), [Cypress](#), [Node.js](#), [GCP BigQuery](#), [GCP Cloud Functions](#), [Flow](#), [GCP Kubernetes](#), [AWS Lambda](#), [MySQL](#), [Redis](#), [GraphQL](#) and more
- 2014 – 2017
- **Academic Software Engineer at Leiden University and UCL**
I was lead architect of ApiNATOMY, a plugin-based 3D web-application for navigating and annotating hierarchical representations of human anatomy.
[ECMAScript 2015+](#), [AngularJS 2](#), [RxJS 5](#), [Three.js](#), [d3.js](#), [Node.js](#), [Neo4j](#), [MongoDB](#)
- 2013 – 2014
- **Software Engineer at the CWI**
I developed Talescape, the prototype for an augmented reality application that maps GPS location to specific (moving) audio tracks.
[JavaScript](#), [Google Maps API](#), [SVG](#), [Bacon.js](#)
- 2009 – 2013
- **PhD Student at the CWI and Leiden University**
I developed the theory of Delta Modeling, a design pattern for achieving feature-modularity and separation of concerns in large software systems. Working libraries were developed for JavaScript and \LaTeX .
[Coq](#), [JavaScript](#), [\$\LaTeX\$](#) , [Java](#), [Android](#)
- 2007 – 2009
- **Student Assistant for Jobmotion, Leiden University**
[C++](#), [whiteboard](#)
- 2005 – 2007
- **Software Engineer for Carlo Roosen Studio**
[C++](#), [Boost](#), [Qt](#)
- 2003 – 2005
- **Web Development and Web Design on freelance basis**
[HTML](#), [CSS](#), [PHP](#), [JavaScript](#)

Education

- 2009 – 2014
- PhD in Computer Science at the CWI and Leiden University
- 2007 – 2009
- Master of Science in Computer Science at Leiden University (*cum laude*)
- 2004 – 2007
- Bachelor of Science in Informatica at Leiden University (*cum laude*)
- 1998 – 2004
- Voorbereidend Wetenschappelijk Onderwijs at Alfrink College Zoetermeer
- 1999 – 2000
- MBO Algemene Ondernemers Vaardigheden at the NHA
- 1997 – 1998
- MBO Praktische Informatiekunde 1 at Stichting Facta

Technical Skills

...include, but are not limited to ...

- Programming Languages: [ECMAScript 2015+](#), [Typescript](#), [Flow](#), [C++](#), [Java](#), [L^AT_EX](#)
- Web Development: [HTML 5](#), [SVG](#), [CSS 3](#), [SCSS](#), [Node.js](#), [Neo4j](#), [MongoDB](#), [Firebase](#), [Babel](#), [Parcel](#), [Webpack](#), [Grunt](#), [NPM](#), [Karma](#)
- Libraries & Frameworks: [jQuery](#), [Lodash](#), [AngularJS 2+](#), [React](#), [Three.js](#), [d3.js](#), [RxJS 5](#), [Cypress](#), [Docker](#), [GCP](#), [MySQL](#), [GraphQL](#), [Redis](#), [Android](#), [Qt](#), [Boost](#)
- Proficient with most best practices in coding, such as code documentation, test-driven development, continuous integration and agile project management.
- A particular expertise in writing maintainable code. Feature modularity and separation of concerns have been a research focus.

Academic Summary

A full academic CV is available at: <http://www.mhelvens.net/cv>

- Authored 17 peer-reviewed papers on theoretical and practical Computer Science. Highlights:
 - *M. Helvensteijn* and F. Arbab: Toward a Formal Foundation for Time Travel in Stories and Games, a chapter in “Theory and Practice of Formal Methods”, Lecture Notes in Computer Science, pp. 261–276, [doi](#)
 - B. de Bono, P. Grenon, *M. Helvensteijn*, J. Kok and N. Kokash: ApiNATOMY: The Generation of Interactive Circuitboard Views of Complex Physiology Knowledge, in the Proceedings of the Virtual Physiological Human Conference
 - *M. Helvensteijn*: The `pkgloader` and `lt3graph` Packages: Toward simple and powerful package management for L^AT_EX, in TUGboat, the Communications of the T_EX Users Group, issue 35:1, 2014
 - D. Clarke, *M. Helvensteijn*, I. Schaefer: Abstract Delta Modeling, in Mathematical Structures of Computer Science special issue: Objects and Services [doi](#)
- Reviewed papers for 12 different academic journals and conferences.
- Went on 23 international visits to academic institutions and conferences.
- Lectured on Hoare Logic, Qt development, Android development and web development.
- Organized a biweekly colloquium, an international conference and a weekly research group meeting at the CWI.

Awards & Honors

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|------|----------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| 2014 | • Won 1 st prize at the ng-europe 2014 Royal Hackathon for best use of Pusher | www |
| 2013 | • 1 st place at Startup Weekend Enschede 2013 | www |
| 2009 | • Cum Laude Master’s Degree in Computer Science | |
| 2007 | • Cum Laude Bachelor’s Degree in Informatica | |
| 2005 | • Jong Talent Aanmoedigings Prijs ‘Informatica & Technische Informatica’ from the Koninklijke Hollandse Maatschappij der Wetenschappen | www |

Open Source Projects

- | | | |
|------------|-----------------------------------------------------------------------------------------------------------------------------|---------------------|
| 2017 – ... | • <code>boxer</code> : a JavaScript library for dragging / resizing / rotating / nesting SVG boxes | www |
| 2014 – ... | • <code>delta.js</code> : an implementation of delta modeling for JavaScript | www |
| 2014 – ... | • <code>graph.js</code> : a graph datastructure for JavaScript | www |
| 2014 – ... | • <code>pkgloader</code> : a L ^A T _E X package for managing the options and loading order of packages | www |
| 2014 – ... | • <code>delta-modules</code> : an implementation of delta modeling for the L ^A T _E X language | www |
| 2013 – ... | • <code>lt3graph</code> : a graph datastructure for the L ^A T _E X3 programming environment | www |
| 2013 – ... | • <code>underoverlap</code> : a L ^A T _E X construct for partly overlapping math decorations | www |

- 2012 – ... • `withargs`: a \LaTeX construct for locally passing token-lists as `#i` arguments [www](#)
- 2011 – 2014 • Delta Profiles: a smart, modular profile manager for Android based on Delta Modeling [www](#)
- 2008 – 2009 • Mist: the design of a high level programming language [www](#)