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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

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- 2014 – 2017
- **Academic Software Engineer at Leiden University and UCL**  
I am 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 L<sup>A</sup>T<sub>E</sub>X.  
[Coq](#), [JavaScript](#), [L<sup>A</sup>T<sub>E</sub>X](#), [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

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- 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

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

- Programming Languages: [ECMAScript 2015+](#), [Typescript](#), [C++](#), [Java](#), [L<sup>A</sup>T<sub>E</sub>X](#)
- Web Development: [HTML 5](#), [SVG](#), [CSS 3](#), [SCSS](#), [Node.js](#), [Neo4j](#), [MongoDB](#), [Firebase](#), [Babel](#), [Webpack](#), [Grunt](#), [NPM](#), [Karma](#), [Docker](#)
- Libraries & Frameworks: [jQuery](#), [Lodash](#), [AngularJS 2+](#), [Three.js](#), [d3.js](#), [RxJS 5](#), [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

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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<sup>A</sup>T<sub>E</sub>X, in TUGboat, the Communications of the T<sub>E</sub>X 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 <sup>st</sup> prize at the ng-europe 2014 Royal Hackathon for best use of Pusher   | <a href="#">www</a> |
| 2013 | • 1 <sup>st</sup> place at Startup Weekend Enschede 2013   | <a href="#">www</a> |
| 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 Hollandsche Maatschappij der Wetenschappen | <a href="#">www</a> |

## Open Source Projects

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|-------------|--|---------------------|
| 2017 – ...  | • <code>boxer</code> : a JavaScript library for dragging / resizing / rotating / nesting SVG boxes                                 | <a href="#">www</a> |
| 2014 – ...  | • <code>delta.js</code> : an implementation of delta modeling for JavaScript   | <a href="#">www</a> |
| 2014 – ...  | • <code>graph.js</code> : a graph datastructure for JavaScript   | <a href="#">www</a> |
| 2014 – ...  | • <code>pkgloader</code> : a L <sup>A</sup> T <sub>E</sub> X package for managing the options and loading order of packages        | <a href="#">www</a> |
| 2014 – ...  | • <code>delta-modules</code> : an implementation of delta modeling for the L <sup>A</sup> T <sub>E</sub> X language                | <a href="#">www</a> |
| 2013 – ...  | • <code>lt3graph</code> : a graph datastructure for the L <sup>A</sup> T <sub>E</sub> X3 programming environment                   | <a href="#">www</a> |
| 2013 – ...  | • <code>underoverlap</code> : a L <sup>A</sup> T <sub>E</sub> X construct for partly overlapping math decorations                  | <a href="#">www</a> |
| 2012 – ...  | • <code>withargs</code> : a L <sup>A</sup> T <sub>E</sub> X construct for locally passing token-lists as <code>#i</code> arguments | <a href="#">www</a> |
| 2011 – 2014 | • Delta Profiles: a smart, modular profile manager for Android based on Delta Modeling   | <a href="#">www</a> |
| 2008 – 2009 | • Mist: the design of a high level programming language  | <a href="#">www</a> |