

C.V. Martijn Schrage



Personalia

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Date of birth: 4 June 1973
Nationality: Dutch

Education

1999 - 2004 Utrecht University, Software Technology group: PhD Computer Science
1991 - 1997 Utrecht University: MsC Computer Science (Cum laude)
1996 Utrecht University: Propedeutical degree Psychology
1994 University of Wisconsin - Madison: exchange student (Fulbright grant)
1986 - 1991 Niels Stensen College, Utrecht: VWO (grade average: 8.0)

Programming languages / frameworks

Haskell, JavaScript (React, Node.js, Angular, Express, JQuery, Lodash, D3), TypeScript, MongoDB, SQL, Git, SVN, Ansible, Travis, CircleCI, PHP, Objective C (iPhone/iPad), Java (Eclipse), C#, Joomla

Key Skills and Strengths

- Design and implementation of complex software
- Quickly picking up new languages and technologies
- Design of dynamic user-friendly interfaces
- Scientific research

Languages

- Dutch (native language)
- English (fluent)

Professional experience (self-employed)

Jan 2014 - present **Well-Typed Ltd.** (Haskell)
Part-time Haskell consultant

Nov 2016 - Mar 2016 **DelphiCloud forecasting website** (JavaScript, React/Redux, Webpack, D3)
Front-end development consultancy

- Design/implementation of responsive React D3 components for visualizing probability distributions
- Design/implementation of user-friendly React team-management component
- Setup of Redux infrastructure and conversion of several pages to Redux
- Setup of incremental webpack build environment & Nightwatch test suite
- Cleanup/debugging/reduction of legacy CSS/JavaScript codebase

Jun 2016 - Dec 2016 **Omnia search engine** (Haskell, AWS (EC2, S3), Ansible, CircleCI, PostgreSQL)
Document-ingestion backend written in Haskell using CloudHaskell Erlang-style concurrency

- Design/implementation of log-structured persistency for large corpus data structures on S3
- Debugging & low-level optimization of concurrent multi-hour ingest runs on 100+ EC2 cores with multi-terabyte inputs and multi-gigabyte log files
- Setup of Ansible automation for running document ingest on AWS
- Implementation of TF/IDF reference tests and setup/maintenance of CircleCI test suite

Dec 2015 - Apr 2016 **Veranderkracht:** www.interimreview.nl (Angular, TypeScript/JavaScript, MongoDB, Grunt)
Design & implementation of review site for interim professionals

- MEAN stack, single-page responsive Bootstrap client
- Autonomous account creation with email validation
- Bluebird promises, Shared code between client and server

Sep 2014 - Apr 2015 **Netherlands Food and Consumer Product Safety Authority (NVWA)**
DTV project: new time-tracking database (Haskell, Angular, JavaScript, Git)

- Modifications and improvements to the Ampersand compiler for generating database model
- Migration from Subversion to Git + Git instruction to other team members

Apr 2014 - May 2015 **RuG + several companies: Cercando project** (TypeScript, JavaScript, Node.js, D3, Java)
Design and implementation of system for tracking visitors of the Rotterdam Museum of Natural History in real time using RFID antennas, and visualization of visitor movement

- Design & implementation of entire system, including incremental trilateration algorithm
- Low-level communication with RFID hardware, Web server, Client web app

Dec 2013 - Mar 2014 **Pics on Air Ltd.: ShotVibe** (Objective C, Java)
Photo-sharing app (available in App Store)

- Lead iOS developer

Oct 2013 - Dec 2013 **Rijksuniversiteit Groningen / Drents Museum: MuseumPlus** (JavaScript, Node.js, D3)
Visualization tool for tracking museum visitors

- Web application for visualizing movement of museum visitors
- Derivation of visitor positions from RFID sensor data through trilateration

Mar 2013 - Jun 2013 *Self study JavaScript libraries, construction Oblomov website, disclosure of old projects*

Sep 2012 - Feb 2013 **Private project (WBSO): WebViews** (Haskell, JavaScript)
Framework for dynamic web-applications generated from abstract specifications

Mar 2012 - May 2012

- Incremental web server
- Combination of server-side en client-side computations
- Examples built: advertising site for borrowing items, restaurant reservation app
- Part research

May 2012 - Jul 2012 **Open source projects Haskell community** (Java, Haskell)

- EclipseFP: IDE for Haskell in Eclipse
- NipTuck: code formatter for EclipseFP

Sep 2011 - Apr 2012 **Dutch Council for the Judiciary: project Koppelvlak** (Haskell, JavaScript, PHP, SQL)
Scientific programmer: worked on Ampersand compiler, which generates a functional specification and prototype web application from an algebraic specification

- Development/improvement of generator for functional specifications and prototypes
- Extensions to Ampersand specification language
- Web front-end for MySQL database

Dec 2010 - May 2011 **iPhone app: hiRise** (Objective C)
Augmented-reality app for measuring the height of buildings (available in App Store)

- Filters for stabilizing gyroscope and other sensors
- Developed augmented-reality algorithms from scratch

Nov 2010 **Central Veterinary Institute: project Piglet 2.0** (JavaScript, Haskell)

- Implementation of multiple-language interface for data-input web application

Aug 2009 - Aug 2010 **Utrecht University: project ALIVE** (Java, Eclipse)
Model-driven framework for design and analysis of agent-based organization models

- Debugging and integration of several existing Java/Eclipse tools
- Design/implementation several graphical editors using GMF method
- Built advanced editor for logical expressions with in-place error messages

May 2009 - Jul 2009 **Central Veterinary Institute: project Piglet 2.0** (JavaScript, Haskell)
Web-interface for data input swine-flu project

- User friendly because meant to be used by vets

Jan 2009 - Feb 2010 **NLnet foundation: project Proxima 2.0** (Haskell, JavaScript)

Follow-up project to PhD research, subsidized by NLnet foundation.

- Development of web-interface for generic WYSIWYG structure editor Proxima
- Incremental graphical renderer
- Developed techniques for handling network latency en low band width
- Also WBSO grant

Professional experience (other)

- 2004 - 2009 **Utrecht University: Scientific programmer** (Haskell, C#)
Decision Support Systems group
- Development/maintenance of Bayesian-network toolkit Dazzle
 - Graph editor/probabilistic algorithms/user interaction
 - Moderately large project: 10,000 lines of Haskell (comparable to 200,000 lines of Java)
 - Pocket PC application for data input by vets
 - Part research
- 2004 - 2006 **Utrecht University: Assistant professor Software Technology group**
- Courses: Functional Programming, Grammars and Parsing, Editing Structured Documents & XML, Software Architecture, Programming Environments
 - Supervision of several master's students and one PhD student
 - Research/development of Proxima editor (Haskell)
 - Presentations, incl. Invited speaker, PSD Workshop 2005, University of Tokyo, Japan
- 1999 - 2004 **Utrecht University: PhD**
Design of the generic WYSIWYG structure editor Proxima
- Requirements analysis, Formal specification of architecture, Abstractions for editing/user interaction, Prototype implementation (Haskell)
- 1997 - 1999 **Utrecht University: Scientific programmer, Software Technology group**
- Design/implementation content-management system for educational materials (Java)

Other interests

Playing the piano, film, traveling, gaming, theater