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# CURRICULUM VITAE

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MAGNUS MADSEN

Name: Magnus Madsen  
Born: 1986-05-22  
Nationality: Danish  
  
E-mail: mmadsen@uwaterloo.ca  
Website: <http://plg.uwaterloo.ca/~mmadsen>



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## RESEARCH EXPERIENCE

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My primary research area is static analysis. Specifically, I have worked on various aspects of dataflow analysis for the JavaScript programming language. In recent work, I, along with my co-authors, have studied string domains for dynamic field access in JavaScript, event-based NodeJS applications and sparseness techniques to speed-up a dataflow analysis.

Although JavaScript has been a vehicle for my research, I am broadly interested in the area of programming languages. I am a devotee of functional programming, interested in type systems and automated program verification.

I successfully defended my PhD thesis "Static Analysis of Dynamic Languages" in May, 2015.

Beginning September 1<sup>st</sup> I am joining the programming language group at the University of Waterloo as a Post Doc.

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## PUBLICATIONS

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"Sparse Dataflow Analysis with Pointers and Reachability" *with Anders Møller, in Proc. 21st International Static Analysis Symposium (SAS) 2014.* September 2014

"String Analysis for Dynamic Field Access" *student paper with Esben Andreasen, in Proc. 23rd International Conference on Compiler Construction (CC) 2014.* March 2014

"Practical Static Analysis of JavaScript Applications in the Presence of Frameworks and Libraries" *with Benjamin Livshits and Michael Fanning, in ESEC/FSE '13, Proc. 9th European Software Engineering Conference / International Symposium on Foundations of Software Engineering.* August 2013

"Modeling the HTML DOM and Browser API in Static Analysis of JavaScript Web Applications", *with Simon Holm Jensen and Anders Møller, in ESEC/FSE '11, Proc. 8th European Software Engineering Conference / ACM SIGSOFT International Symposium on Foundations of Software Engineering.* September 2011

"Static Analysis of Dynamic Languages" *PhD Thesis.* May 2015

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## IN SUBMISSION

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"Static Analysis of Event-based JavaScript Applications" *with Frank Tip and Ondrej Lhoták, submitted to OOPSLA 2015* May 2015

## EDUCATION

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<i>PhD in Computer Science</i> Department of Computer Science Aarhus Universitet (Aarhus, Denmark)	May 2010 – May 2015
<i>MSc in Computer Science</i> Department of Computer Science Aarhus Universitet (Aarhus, Denmark)	September 2009 – October 2012
<i>BSc in Computer Science</i> Department of Computer Science Aarhus Universitet (Aarhus, Denmark)	August 2006 – January 2010

## INTERNSHIPS & SUMMERSCHOOLS

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<i>Internship at Samsung Research America with Frank Tip as mentor</i> (Samsung Research America, Mountain View, CA, USA)	March 2015 – July 2015
<i>Internship at Microsoft Research with Ben Livshits as mentor</i> (Microsoft Research, Redmond, WA, USA)	March 2012 – July 2012
<i>Summer School in Software Engineering and Verification</i> (Hosted by Microsoft Research in Moscow, Russia)	July 2011

## RECENT ACTIVITIES

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<i>Presented recent work at Roskilde Universitet, Denmark</i>	March 2015
<i>Presented recent work at EPFL in Lausanne, Switzerland</i>	November 2014
<i>Presented paper at SAS '14 in Munich, Germany</i>	September 2014
<i>Presented recent work at DANSAS '14</i>	August 2014
<i>Attended ETAPS '14 in Grenoble, France</i>	November 2014
<i>Presented recent work at Aalborg University, Denmark</i>	December 2013
<i>Presented paper at FSE/ESEC '13 in St. Petersburg, Russia</i>	August 2013

## TEACHING EXPERIENCE

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<i>Regularity and Automata (T.A.)</i>	April 2013 – June 2013
<i>Software Architecture (T.A.)</i>	October 2012 – December 2012
<i>Algorithms &amp; Data Structures (T.A.)</i>	January 2012 – June 2012
<i>Software Architecture (T.A.)</i>	October 2011 – December 2011
<i>Perspective in Computer Science (T.A.)</i>	August 2011 – October 2011
<i>Algorithms &amp; Data Structures (T.A.)</i>	January 2011 – June 2011
<i>Information Systems (T.A.)</i>	October 2010 – December 2011
<i>Database Systems (T.A.)</i>	August 2010 – October 2010

## WORK HISTORY

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*Student Programmer*

Datalogisk Institut,  
Århus Universitet

February 2010 – May 2010

*Server Administration & Customer Service*

TDC Hosting A/S

October 2005 – May 2008

*Hosting Consultant*

ActiveWebs A/S

September 2005 – 2012