

# Vaspol Ruamviboonsuk

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EDUCATION	Ph.D. in Computer Science and Engineering <b>University of Michigan</b> , Ann Arbor, MI Advisor: Prof. Harsha V. Madhyastha	Expected Aug, 2020
	M.S. in Computer Science and Engineering <b>University of Michigan</b> , Ann Arbor, MI Advisor: Prof. Harsha V. Madhyastha	2016
	B.S. with Distinction in Computer Science <b>University of Washington</b> , Seattle, WA Advisor: Prof. Richard Ladner Thesis: DigiTaps: Eyes-free Number Entry Method with Minimal Voice Feedback	2014
OBJECTIVE	I am looking for a full-time position starting in September, 2020. I seek to apply my research background in optimizing web page load performance to users at a global scale by using my skills and experience in identifying page load performance bottlenecks such as analyzing browsers' page load tracing information and inspecting packet-level interactions between client and server.	
PUBLICATIONS	<b>Taking the Long View: The Relationship between Page Complexity and Performance on the Web</b> ( <i>Under submission</i> ) Vaspol Ruamviboonsuk, Ravi Netravali, and Harsha V. Madhyastha IMC 2020	
	<b>Rethinking Client-Side Caching for the Mobile Web</b> ( <i>Under submission</i> ) Ayush Goel, Vaspol Ruamviboonsuk, Ravi Netravali, and Harsha V. Madhyastha IMC 2020	
	<b>Vroom: Accelerating the Mobile Web with Server-Aided Dependency Resolution</b> Vaspol Ruamviboonsuk, Ravi Netravali, Muhammed Uluyol, and Harsha V. Madhyastha ACM SIGCOMM 2017, Los Angeles, CA, August 2017 <b>Presented work at IETF-101 in receipt of IRTF's ANRP award</b>	
	<b>Demonstration of the Myria big data management service</b> Daniel Halperin, Victor Teixeira de Almeida, Lee Lee Choo, Shumo Chu, Paraschos Koutris, Dominik Moritz, Jennifer Ortiz, Vaspol Ruamviboonsuk, Jingjing Wang, Andrew Whitaker, Shengliang Xu, Magdalena Balazinska, Bill Howe, and Dan Suciu ACM SIGMOD 2014, Snowbird, UT, November 2014	
	<b>Tapulator: A non-visual calculator using natural prefix-free codes</b> Vaspol Ruamviboonsuk, Shiri Azenkot, and Richard E Ladner ACM ASSETS 2012, Boulder, CO, October 2012 ( <i>Poster</i> )	
AWARDS	Internet Research Task Force, <b>Applied Networking Research Prize</b> , 2018 University of Michigan, <b>First-year Ph.D. Student Fellowship</b> , 2014 University of Washington, <b>Mary Gates Research Scholarship</b> , 2013	
WORK EXPERIENCE	<b>Software Engineer Intern</b> Google Inc. Ann Arbor, MI Team: Chrome Data Saver	10/2018 - 3/2019

*Project:* Wrap up the projects done with the team over Summer of 2017 and 2018 by submitting a paper to the NSDI 2020 conference.

**Software Engineer Intern**

6/2018 - 8/2018

Google Inc., Seattle, WA

Team: Chrome Data Saver

*Project:* Optimized Chrome Lite Page render performance by identifying that fetches of CSS slows down rendering. Sped up the rendering of web pages by 50% by inlining CSS to the HTML, which eliminates the penalty of fetching CSS resources over the network.

**Software Engineer Intern**

9/2017 - 12/2017

Google Inc., Mountain View, CA

Team: Ads Quality

*Project:* Investigated various prefetching strategies to better understand performance implications of prefetching different web page resource.

**Software Engineer Intern**

5/2017 - 8/2017

Google Inc., Seattle, WA

Team: Chrome Data Saver

*Project:* Prototyped of a server-side rendering system to improve the user experience when browsing the web on slow cellular networks using resource-constrained devices; press release: <https://blog.chromium.org/2019/03/chrome-lite-pages-for-faster-leaner.html>.

**Graduate Student Research Assistant**

5/2015 - Present

Advisor: Prof. Harsha V. Madhyastha.

Electrical Engineering and Computer Science Department, University of Michigan, Ann Arbor, MI

**Software Developer Engineer in Test Intern**

6/2013 - 9/2013

Microsoft. Redmond, WA

*Project:* Extended Windows Intune test framework to support fuzz testing, developed test modules using the extended features, and incorporated the module as part of the weekly test suite.

**Software Engineer Intern**

6/2012 - 8/2012

Cobalt. Seattle, WA

*Project:* Designed and developed an internal monitoring tool that periodically aggregates application server logs for checking system health.

**RESEARCH  
EXPERIENCE**

**Longitudinal study of the web complexity and web performance**

*Advisor: Prof. Harsha V. Madhyastha*

2019 - 2020

In this project, we seek to answer the following questions: “How have web pages changed over the years?”, and “What has been the corresponding impact on web performance?”. We conduct a longitudinal study using the HTTP Archive dataset to study the relationship between the change in page complexity and the change in performance websites between the year 2016 and 2019. We observe that many of the web pages with more content in 2019 compared to 2016 do not see a proportionate slowdown in their loads.

**Optimizing rendering for Google Lite Pages**

*Advisor: Prof. Harsha V. Madhyastha and Chrome Data Saver Team*

2017 - 2019

The Chrome Data Saver proxy optimizes web pages loads by having performant proxies substantially simplify web pages. we investigated the rendering inefficiencies of the simplified web pages and devise optimizations that accelerate the simplified pages, which results in a 50% improvement in rendering.

**Vroom [SIGCOMM'17]**

*Advisor: Prof. Harsha V. Madhyastha*

2015 - 2017

Mobile page loads are slow because of underutilization of network and computational resources; a client can fetch the resources on a page only after it discovers them by parsing and executing other resources on the page. I designed and implemented the Vroom framework, which decouples discovery of resources from parsing and execution by leveraging recent web optimization techniques such as HTTP/2 PUSH and Link preload headers. Vroom is able to improve the median page load time by 5 seconds.

**Improving latency from clients to cloud services***Advisor: Prof. Harsha V. Madhyastha**05/2015 - 10/2015*

- Analyzed internet measurement data to identify degradations of latency between clients and web service front-ends.
- Designed and implemented an algorithm for dynamically varying which front-end a client is redirected to in order to minimize the user-perceived latencies.

**Numerical input gestures for visually-impaired people [ASSETS'12]***Advisor: Prof. Richard Ladner**2011 - 2014*

- Designed special gestures for inputting numbers on smartphones by leveraging multi-touch input surface for blind smartphone users.
- Implemented the prototype in the form of an iOS application.

**Myria, Big Data as a Service [SIGMOD'14]***Advisor: Prof. Magdalena Balazinska**2012 - 2014*

- Implemented a database operator in the system.

**TEACHING  
EXPERIENCE****Graduate Student Instructor***1/2017 - 4/2017*

Department of Computer Science and Engineering, University of Michigan, Ann Arbor, MI

- EECS 498: Introduction to Distributed Systems (Winter 2017)

**Teaching Assistant***9/2012 - 3/2014*

Department of Computer Science and Engineering, University of Washington, Seattle, WA

- CSE 344: Introduction to Data Management (Fall 2012, Winter 2013, Winter 2014)

**SKILLS**

Most of my work is done in C/C++, Go, Java, JavaScript, and Python. I also have some experience working with networking tools such as iptables and tcpdump. I am also familiar with interacting with Android smartphones via ADB.