

# Vaibhav Bajpai

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CONTACT INFORMATION	Computer Networks and Distributed Systems Jacobs University Bremen	<a href="mailto:v.bajpai@jacobs-university.de">v.bajpai@jacobs-university.de</a> <a href="http://www.vaibhavbajpai.com">http://www.vaibhavbajpai.com</a>
EDUCATION	<b>Jacobs University Bremen</b> , Germany Doctor of Philosophy, Computer Science <ul style="list-style-type: none"><li>— <i>Dissertation title: Understanding the Impact of Network Infrastructure Changes using Large-Scale Measurement Platforms</i></li><li>— <i>Dissertation work under the guidance of Prof. Dr. Jürgen Schönwälder</i></li></ul>	Sep 2012—Present
	<b>Jacobs University Bremen</b> , Germany Master of Science, Computer Science <ul style="list-style-type: none"><li>— <i>Masters Thesis: A complete system integration of the network flow query language, under the guidance of Prof. Dr. Jürgen Schönwälder</i></li><li>— <i>Graduated with a 1.0 grade on the masters thesis, 1.64 overall GPA</i></li><li>— <i>Merit-based tuition scholarship and stipend for the entire duration</i></li></ul>	Sep 2010—Aug 2012
PROFESSIONAL EXPERIENCE	<b>Jacobs University Bremen</b> , Germany Research Associate <ul style="list-style-type: none"><li>— <i>Leone FP7 EU Project: From Global Measurements to Local Management</i></li><li>— <i>Flamingo FP7 EU Project: Management of the Future Internet</i></li></ul>	Dec 2012—Present
	<b>Jacobs University Bremen</b> , Germany Student & Teaching Assistant <ul style="list-style-type: none"><li>— <i>Internet Measurement and Management Lab</i>, Spring 2014</li><li>— <i>Computer Networks</i>, Fall 2013</li><li>— <i>Implementation of the Network Flow Query Language (NFQL)</i>, Summer 2012</li><li>— <i>Software Engineering Lab</i>, Spring 2012</li><li>— <i>Networks and Protocols &amp; Algorithms and Data Structures</i>, Fall 2011</li><li>— <i>Machine Vision Project</i>, Spring 2011</li></ul>	Feb 2011— Present
PUBLICATIONS	Vaibhav Bajpai, Radek Krejčí: Managing SamKnows Probes using NETCONF, <i>14th IEEE/IFIP Network Operations and Management Symposium (NOMS 2014)</i> , Krakow, May 2014.	
	Vaibhav Bajpai, Jürgen Schönwälder: NETCONF Interoperability Lab, <i>14th IEEE/IFIP Network Operations and Management Symposium (NOMS 2014)</i> , Krakow, May 2014.	
	Vaibhav Bajpai, Jürgen Schönwälder: Measuring TCP Connection Establishment Times of Dual-Stacked Web Services, <i>9th International Conference on Network and Service Management (CNSM)</i> , Zürich, October 2013. <a href="http://dx.doi.org/10.1109/CNSM.2013.6727822">http://dx.doi.org/10.1109/CNSM.2013.6727822</a>	
	Vaibhav Bajpai, Jürgen Schönwälder: Understanding the Impact of Network Infrastructure Changes using Large-Scale Measurement Platforms, <i>7th International Conference on Autonomous Infrastructure, Management and Security (AIMS)</i> , Barcelona, June 2013. <a href="http://dx.doi.org/10.1007/978-3-642-38998-6_5">http://dx.doi.org/10.1007/978-3-642-38998-6_5</a>	
	Vaibhav Bajpai, Johannes Schauer, Jürgen Schönwälder: NFQL: A Tool for Querying Network Flow Records, <i>13th IEEE International Symposium on Integrated Network Management (IM)</i> , Ghent, May 2013. <a href="http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=6573045">http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=6573045</a>	
	Vaibhav Bajpai, Vitali Bashko, Catalin David, Siarhei Kuryla, Vladislav Perelman, Johannes Schauer, Nikolay Melnikov, Anuj Sehgal, Jürgen Schönwälder: Design and Prototype Implementation of the WattsApp	

	Telemetry Platform, <i>IEEE International Conference on Internet of Things (iThings)</i> , Besançon, November 2012. <a href="http://dx.doi.org/10.1109/GreenCom.2012.21">http://dx.doi.org/10.1109/GreenCom.2012.21</a>
	Vaibhav Bajpai and Vladislav Perelman: A Cross-Platform Open Source 3D Object Reconstruction System using a Laser Line Projector, <i>3rd IEEE Germany Student Conference (GSC)</i> , Passau, November 2012.
	Vaibhav Bajpai, Nikolay Melnikov, Anuj Sehgal, Jürgen Schönwälder: Flow-based Identification of Failures Caused by IPv6 Transition Mechanisms, <i>6th Conference on Autonomous Infrastructure, Management and Security (AIMS)</i> Luxembourg, June 2012. <a href="http://dx.doi.org/10.1007/978-3-642-30633-4_19">http://dx.doi.org/10.1007/978-3-642-30633-4_19</a>
INTERNET DRAFTS	<p>Marcelo Bagnulo, Trevor Burbridge, Sam Crawford, Jürgen Schönwälder and Vaibhav Bajpai, Large Measurement Platform Protocol: draft-bagnulo-lmap-http, Internet Draft, July 2013. <a href="http://tools.ietf.org/html/draft-bagnulo-lmap-http-00">http://tools.ietf.org/html/draft-bagnulo-lmap-http-00</a></p> <p>Vaibhav Bajpai and Jürgen Schönwälder, Measuring the Effects of Happy Eyeballs: draft-bajpai-happy. Internet Draft, July 2013. <a href="http://tools.ietf.org/html/draft-bajpai-happy-01">http://tools.ietf.org/html/draft-bajpai-happy-01</a></p>
TECHNICAL ARTICLES	Evaluating the Effectiveness of Happy Eyeballs, <i>RIPE Labs Article</i> , June 2013. <a href="https://labs.ripe.net/Members/vaibhav_bajpai/evaluating-the-effectiveness-of-happy-eyeballs">https://labs.ripe.net/Members/vaibhav_bajpai/evaluating-the-effectiveness-of-happy-eyeballs</a>
PAST PROFESSIONAL EXPERIENCES AND EDUCATION	<p><b>Infosys Technologies Ltd</b>, Bangalore, India <span style="float: right;">Jul 2009—Jun 2010</span>  Systems Engineer <ul style="list-style-type: none"> <li>— Certified, Infosys Mainframe Foundation Developer, PR — 101</li> <li>— Felicitated as the top entry-level candidate after industrial training (GPA 5/5)</li> </ul> </p> <p><b>Uttar Pradesh Technical University</b>, India <span style="float: right;">Aug 2005—Jun 2009</span>  Bachelor of Technology, Computer Science and Engineering <ul style="list-style-type: none"> <li>— Bachelors Project: Dexter, A social experience on top of google search results, under the guidance of Prof. Sanjeev Pippal</li> <li>— Graduated as the top student of the class (80.84%)</li> <li>— Merit position 9<sup>th</sup> amongst all freshmen encompassing 600 affiliated colleges</li> </ul> </p> <p><b>Kendriya Vidyalaya Aliganj</b>, India <span style="float: right;">Mar 2003—Mar 2005</span>  Central Board of Secondary Education <ul style="list-style-type: none"> <li>— Graduated as the top student of the class (3<sup>rd</sup> in city) in XII (93.4%)</li> <li>— Merit certificate for 100% marks in Computer Science in XII</li> <li>— Graduated as the top student of the class in X (86.0%)</li> <li>— Merit certificate for 100% marks in Science in X (felicitated by the State Govt)</li> <li>— All-India merit position 35<sup>th</sup> in Junior Mathematics Olympiad, 2002.</li> </ul> </p>
PHD PROPOSAL	Understanding the Impact of Network Infrastructure Changes using Large-Scale Measurement Platforms, PhD Proposal, September 2013.
MASTERS THESIS	F(v2): A Complete System Integration of the Network Flow Query Language, Masters Thesis, August 2012 <a href="http://cnds.eecs.jacobs-university.de/archive/msc-2012-vbajpai.pdf">http://cnds.eecs.jacobs-university.de/archive/msc-2012-vbajpai.pdf</a>
TALKS	<p>Lessons Learned From Using the RIPE Atlas Platform for Measurement Research, <i>MAT Working Group Meeting at RIPE 68</i>, Warsaw, May 2014. <a href="https://ripe68.ripe.net/programme/meeting-plan/mat-wg">https://ripe68.ripe.net/programme/meeting-plan/mat-wg</a></p> <p>Measuring TCP Connection Establishment Times of Dual-Stacked Web Services, <i>Internet Research Task Force (IRTF) Network Management Research Group (NMRG) Workshop on Large-Scale Network Measurements at CNSM 2013</i>, Zürich, October 2013. <a href="http://www.ietf.org/proceedings/interim/2013/10/14/nmrg/slides/slides-interim-2013-nmrg-1-10.pdf">http://www.ietf.org/proceedings/interim/2013/10/14/nmrg/slides/slides-interim-2013-nmrg-1-10.pdf</a></p>

NFQL: A Tool for Querying Network Flow Records, *Internet Research Task Force (IRTF) Network Management Research Group (NMRG) Workshop on NetFlow/IPFIX at Internet Engineering Task Force (IETF) 87*, Berlin, July 2013. <http://www.ietf.org/proceedings/87/slides/slides-87-nmrg-0.pdf>

Measuring the Effects of Happy Eyeballs, *v6ops Working Group Meeting at Internet Engineering Task Force (IETF) 87*, Berlin, July 2013. <http://www.ietf.org/proceedings/87/slides/slides-87-v6ops-8.pdf>

Measuring the Effectiveness of Happy Eyeballs, *IPv6 Working Group Meeting at RIPE 66*, Dublin, May 2013. <https://ripe66.ripe.net/archives/video/1208>

#### SEMINARS

Global Measurement Framework (13472), *A 3-day invitation-only Dagstuhl seminar on Initiating a Coherent Global Measurement Framework for the Internet*, LZI Schloss Dagstuhl, Wadern, November 2013. <http://www.dagstuhl.de/13472>

#### TUTORIALS

Large-Scale Measurement Platforms, *7th IFIP International Autonomous Infrastructure, Management and Security Conference on Dependable Networks and Services (AIMS)*, Barcelona, June 2013. <http://cnds.eecs.jacobs-university.de/tutorials>

#### OPEN SOURCE

Author

- [nfql](#), A C implementation of the network flow query language

Contributor

- [happy](#), A happy eyeballs [RFC 6555] probing tool.
- [ncclient](#), A Python library for NETCONF clients.
- [libnetconf](#), A NETCONF library in C intended for building NETCONF clients and servers.
- [mtr](#), A network diagnostic tool.
- [homebrew-versions](#), Versioned formulae for the Homebrew package manager.
- [slam6d](#), A toolkit with algorithms and methods for processing 3D point clouds.
- [petascope](#), A reference implementation of the OGC WCS standard suite.

#### ACTIVITIES

Course Lectures

- Memory Management, *Operating Systems*, March, 2014
- Large-scale Network Measurements, *Advanced Computer Networks*, March, 2014
- Network Address Translators (NAT), *Computer Networks*, November, 2013
- Internet Protocol (IP), *Computer Networks*, September, 2013
- Sockets API, *Computer Networks*, September, 2013
- [Semaphore Patterns](#) & [Memory Management](#), *Operating Systems*, February, 2013
- [NFQL](#) & [ncclient](#), *Advanced Networking*, October, 2012

Reviewer

- Conference on Autonomous Infrastructure, Management and Security (AIMS): 2014, 2013.
- IEEE Communications Magazine
- IFIP Networking Conference: 2014.
- IEEE/IFIP Network Operations and Management Symposium (NOMS): 2014.
- IFIP/IEEE International Symposium on Integrated Network Management (IM): 2013.

Project Supervision

- RIPE atlas measurements, *Masters Project*
- IPFIX support for NFQL, *Masters Project*
- A Front-End Parser Implementation for NFQL, *Bachelors Thesis*
- NETCONF over TLS implementation, *Bachelors Project*

## Memberships

- IEEE Student Membership
- IEEE Communications Society Membership
- Internet Society Membership
- SIGCOMM Membership
- IFIP TC6 Working Group 6.6 Membership