

CONTACT INFORMATION	<p>Chair of Connected Mobility, I11 Department of Informatics Technische Universität München Boltzmannstraße 3 85748 Garching bei München, Germany</p> <p>✉ bajpaiv@in.tum.de 🌐 www.vaibhavbajpai.com</p>	
RESEARCH INTERESTS	Internet Measurements	
AWARDS	IEEE ComSoc Award for the Best Dissertation in Network and Service Management	2017
EDUCATION	<p>Jacobs University Bremen, Germany</p> <ul style="list-style-type: none"> – Doctor of Philosophy, Computer Science 2012 – 2016 – Master of Science, Computer Science 2010 – 2012 <p>Uttar Pradesh Technical University, India</p> <ul style="list-style-type: none"> – Bachelor of Technology, Computer Science and Engineering 2005 – 2009 	
EXPERIENCE	<p>TU München, Germany (– advised by Jörg Ott)</p> <ul style="list-style-type: none"> – Postdoctoral Fellow 2017 – <p>Jacobs University Bremen, Germany (– advised by Jürgen Schönwälder)</p> <ul style="list-style-type: none"> – Postdoctoral Fellow 2016 – 2016 – Research Associate 2012 – 2016 – Student & Teaching Assistant 2011 – 2014 <p>Infosys Technologies Ltd, Bangalore, India</p> <ul style="list-style-type: none"> – Systems Engineer 2009 – 2010 	
PROJECTS	<p>Flamingo FP7 EU Project – Management of the Future Internet 2015 – 2016</p> <ul style="list-style-type: none"> – Responsible for WP1 – Contributions to WP2, WP3, WP4, and WP5 <p>Leone FP7 EU Project – From Global Measurements to Local Management 2012 – 2015</p> <ul style="list-style-type: none"> – Contributions to WP1, WP2, WP3 and WP4 	
TEACHING	<p>Lecturer – TU Munich</p> <ul style="list-style-type: none"> – Future Internet Protocols: Design Principles and Deployment 2017 – Internet Measurements Seminar 2017 <p>Guest Lecturer – TU Munich</p> <ul style="list-style-type: none"> – Networked Multimedia Systems 2017 <p>Guest Lecturer – Jacobs University Bremen</p> <ul style="list-style-type: none"> – Operating Systems 2014, 2013 – Computer Networks 2014, 2013 – Advanced Computer Networks 2014, 2012 <p>Teaching Assistant – Jacobs University Bremen <i>responsibilities involved preparing and grading assignments</i></p> <ul style="list-style-type: none"> – Internet Measurement and Management Lab 2014 – Computer Networks 2014, 2013, 2011 	

- Software Engineering Lab 2012
- Algorithms and Data Structures 2011

MENTORING

Doctoral Students

- Ermias Walelgne. *Measuring Factors affecting Latency in Cellular Networks* 2017
- Alemnew Sheferaw Asrese. *Modeling Web QoS and QoE* 2017

Master Students

- Trinh Viet Doan. *Where are the Google Global Caches?* 2017
- Steffie Jacob Eravuchira. *Measuring Webpage Similarity from Dual-Stacked Hosts* 2015
- Corneliu-Claudiu Prodescu. *IPFIX support for NFQL* 2013

Bachelor Students

- Ozan Kaya. *Comparison of IPv4 and IPv6 Geolocation Accuracy* 2017
- Otar Bichiashvil. *Large-scale TCP throughput performance measurement over IPv4 and IPv6* 2015
- Vlad Victor Ungureanu. *LMAP Protocol Implementation* 2015
- Durim Morina. *A front-end parser for NFQL* 2013
- Mjellma Berisha. *NETCONF over TLS implementation* 2013

PC SERVICE

Technical Program Committee:

- IFIP Networking 2018 – 2017
- IEEE/IFIP Network Operations and Management Symposium (NOMS) 2018
- IFIP/IEEE International Symposium on Integrated Network Management (IM) 2017

Shadow Technical Program Committee:

- Conference on Network and Service Management (CNSM) 2016
- Conference on emerging Networking EXperiments and Technologies (CoNEXT) 2015

External Reviewer:

- IEEE Transactions on Network and Service Management (TNSM) 2017 – 2016
- IEEE Communications Magazine (Network & Service Management Series) 2017 – 2014
- IEEE Communications Magazine (Network Testing & Analytics Series) 2017
- IEEE Communications Magazine (Feature Topic: Human-Driven Edge Computing) 2017
- ACM Transactions on Internet Technology (TOIT) 2017
- IFIP Traffic Measurement and Analysis Conference (TMA) 2017
- ACM Multimedia Conference (ACM-MM) 2017
- ACM SIGCOMM Workshop on Network & OS Support for Digital Audio & Video (NOSSDAV) 2017
- ACM SIGCOMM Computer Communication Review (CCR) 2016
- IEEE Communications Magazine (Feature Topic: Advances in Networking Software) 2016
- IEEE Communications Magazine (Standards Supplement Series) 2016
- Springer Journal of Network and Systems Management (JNSM) 2016, 2014
- IEEE Communications Letters 2016
- Wiley International Journal of Network Management (IJNM) 2016
- IEEE Conference on Network and Service Management (CNSM) 2015
- IFIP/IEEE International Symposium on Integrated Network Management (IM) 2015, 2013
- Conference on Autonomous Infrastructure, Management and Security (AIMS) 2014, 2013
- IFIP Networking Conference 2014
- IEEE/IFIP Network Operations and Management Symposium (NOMS) 2014

JOURNAL PUBLICATIONS

Vaibhav Bajpai, Saba Ahsan, Jürgen Schönwälder, Jörg Ott
 Measuring YouTube over IPv6
 ACM Computer Communication Review (CCR), October 2017 [ISI Impact: 3.81]

Vaibhav Bajpai, Steffie Jacob Eravuchira, Jürgen Schönwälder
 Dissecting Last-mile Latency Characteristics
 ACM Computer Communication Review (CCR), October 2017 [ISI Impact: 3.81]

Vaibhav Bajpai, Jürgen Schönwälder

Network Flow Query Language – Design, Implementation, Performance and Applications
IEEE Transactions on Network and Service Management (TNSM), March 2017 [ISI Impact: 1.29]
<http://dx.doi.org/10.1109/TNSM.2016.2633511>.

Vaibhav Bajpai, Steffie Jacob Eravuchira, Jürgen Schönwälder
Lessons Learned from using the RIPE Atlas Platform for Measurement Research
ACM Computer Communication Review (CCR Editorial), July 2015 [ISI Impact: 3.81]
<http://dx.doi.org/10.1145/2805789.2805796>

Vaibhav Bajpai, Jürgen Schönwälder
A Survey on Internet Performance Measurement Platforms and Related Standardization Efforts.
IEEE Communications Surveys & Tutorials (COMST), April 2015: [ISI Impact: 9.22]
<http://dx.doi.org/10.1109/COMST.2015.2418435>

CONFERENCE
PUBLICATIONS

Vaibhav Bajpai, Jürgen Schönwälder
Understanding the Impact of Network Infrastructure Changes Using Large-Scale Measurement Platforms
Symposium on Integrated Network Management (IM) Dissertation Session, May 2017
<https://doi.org/10.23919/INM.2017.7987382>
[Best Dissertation Digest Award]

Vaibhav Bajpai, Steffie Jacob Eravuchira, Jürgen Schönwälder, Robert Kisteleki, Emile Aben
Vantage Point Selection for IPv6 Measurements: Benefits and Limitations of RIPE Atlas Tags
Symposium on Integrated Network Management (IM), May 2017 [28.6%, 44/154]
<https://doi.org/10.23919/INM.2017.7987262>

Steffie Jacob Eravuchira, Vaibhav Bajpai, Jürgen Schönwälder, Sam Crawford
Measuring Web Similarity from Dual-stacked Hosts
Conference on Network and Service Management (CNSM), October 2016 [27.6%, 32/116]
<https://doi.org/10.1109/CNSM.2016.7818415>

Vaibhav Bajpai, Jürgen Schönwälder
IPv4 versus IPv6 - Who connects faster?
IFIP Networking Conference, May 2015 [23.2%, 47/202]
<http://dx.doi.org/10.1109/IFIPNetworking.2015.7145323>

Saba Ahsan, Vaibhav Bajpai, Jörg Ott, Jürgen Schönwälder
Measuring YouTube from Dual-Stacked Hosts
Passive and Active Measurement Conference (PAM), March 2015 [27%, 27/100].
Workshop on Research and Applications of Internet Measurements (RAIM), October 2015.
http://dx.doi.org/10.1007/978-3-319-15509-8_19

Vaibhav Bajpai, Johannes Schauer, Jürgen Schönwälder
NFQL: A Tool for Querying Network Flow Records,
International Symposium on Integrated Network Management (IM), May 2013
http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=6573045

Vaibhav Bajpai *et al.*
Design and Prototype Implementation of the WattsApp Telemetry Platform,
International Conference on Internet of Things (iThings), November 2012
<http://dx.doi.org/10.1109/GreenCom.2012.21>

Vaibhav Bajpai, Vladislav Perelman
A Cross-Platform Open Source 3D Object Reconstruction System using a Laser Line Projector
IEEE Germany Student Conference (GSC), November 2012.

Vaibhav Bajpai, *et al.*
Flow-based Identification of Failures Caused by IPv6 Transition Mechanisms
Autonomous Infrastructure, Management & Security (AIMS), June 2012 [43.5%, 10/23]
http://dx.doi.org/10.1007/978-3-642-30633-4_19

- IETF RFCs Jürgen Schönwälder, Vaibhav Bajpai
A YANG Data Model for LMAP Measurement Agents
IETF RFC 8194, XXX 2017
<http://tools.ietf.org/html/draft-ietf-lmap-yang-12>
- WORKSHOP
PUBLICATIONS Vaibhav Bajpai, Mirja Kühlewind, Jörg Ott, Jürgen Schönwälder, Anna Sperotto, Brian Trammell
Challenges with Reproducibility
ACM SIGCOMM 2017 Reproducibility Workshop, August 2017.
<https://doi.org/10.1145/3097766.3097767>
- Vaibhav Bajpai, Jürgen Schönwälder
Measuring the Effects of Happy Eyeballs
Applied Networking Research Workshop (ANRW), July 2016. [30%, 9/30]
<http://dx.doi.org/10.1145/2959424.2959429>
- Vaibhav Bajpai, Jürgen Schönwälder
Understanding the Impact of Network Infrastructure Changes using Large-Scale Measurement Platforms
Autonomous Infrastructure, Management & Security (AIMS), June 2013. [50%, 7/14]
http://dx.doi.org/10.1007/978-3-642-38998-6_5
- THESIS Vaibhav Bajpai
Understanding the Impact of Network Infrastructure Changes using
Large-Scale Measurement Platforms
PhD Thesis, Jacobs University Bremen, August 2016
<http://nbn-resolving.de/urn:nbn:de:gbv:579-opus-1005861>
- Vaibhav Bajpai
Network Flow Query Language
Masters Thesis, Jacobs University Bremen, August 2012
<http://cnds.eecs.jacobs-university.de/archive/msc-2012-vbajpai.pdf>
- EVENT REPORTS Vaibhav Bajpai, Arthur W. Berger, Philip Eardley, Jörg Ott, Jürgen Schönwälder
Global Measurements: Practice and Experience (Report on Dagstuhl Seminar #16012)
ACM Computer Communication Review (CCR), April 2016 [ISI Impact: 3.81]
<http://dx.doi.org/10.1145/2935634.2935641>
Dagstuhl Reports, Volume 6, Issue 1, May 2016
<http://dx.doi.org/10.4230/DagRep.6.1.15>
- Vaibhav Bajpai, Jürgen Schönwälder
A Report on the 1st NMRG Workshop on Large Scale Network Measurements
Journal of Network and Systems Management (JNSM), September 2014 [ISI Impact: 1.08]
<http://dx.doi.org/10.1007/s10922-014-9328-2>
- INVITED ARTICLES Vaibhav Bajpai
Evaluating the Effectiveness of Happy Eyeballs
RIPE Labs Article, June 2013.
<https://goo.gl/1mERyV>
- POSTERS Vaibhav Bajpai, Radek Krejčí
Managing SamKnows Probes using NETCONF
IEEE/IFIP Network Operations and Management Symposium (NOMS), May 2014
<http://dx.doi.org/10.1109/NOMS.2014.6838279>
- Vaibhav Bajpai, Jürgen Schönwälder
NETCONF Interoperability Lab
IEEE/IFIP Network Operations and Management Symposium (NOMS), May 2014
<http://dx.doi.org/10.1109/NOMS.2014.6838278>
- Vaibhav Bajpai, Jürgen Schönwälder

Measuring TCP Connection Establishment Times of Dual-Stacked Web Services
Conference on Network and Service Management (CNSM), October 2013
<http://dx.doi.org/10.1109/CNSM.2013.6727822>

INTERNET DRAFTS

Jürgen Schönwälder, Vaibhav Bajpai
Using RESTCONF with LMAP Measurement Agents
IETF Internet Draft (I-D), June 2017 [**Working Group Document**]
<http://tools.ietf.org/html/draft-ietf-lmap-restconf-04>

Marcelo Bagnulo, Trevor Burbridge, Sam Crawford, Jürgen Schönwälder, Vaibhav Bajpai
Large Measurement Platform Protocol
IETF Internet Draft (I-D), September 2014 [**Expired Document**]
<http://tools.ietf.org/html/draft-bagnulo-lmap-http-03>

Vaibhav Bajpai, Jürgen Schönwälder
Measuring the Effects of Happy Eyeballs
IETF Internet Draft (I-D), July 2013 [**Expired Document**]
<http://tools.ietf.org/html/draft-bajpai-happy-01>

INVITED TALKS

Vaibhav Bajpai
Measuring IPv6 Performance
Munich Internet Research Retreat, Raitenhaslach, Nov 2016
<http://vaibhavbajpai.com/documents/talks/v6-mir-raitenhaslach-slides.pdf>

Vaibhav Bajpai
Understanding the Impact of Network Infrastructure Changes using
Large-scale Measurement Platforms.
TU Munich Doctoral Seminar, Raitenhaslach, Oct 2016
<http://vaibhavbajpai.com/documents/talks/tum-raitenhaslach-slides.pdf>

TALKS

Vaibhav Bajpai, Jürgen Schönwälder
A Longitudinal View of Dual-stacked Websites – Failures, Latency and Happy Eyeballs
IETF 99 IPv6 Operations Working Group, Prague, Jul 2017
<https://goo.gl/Xd42wf>

Vaibhav Bajpai, Saba Ahsan, Jörg Ott, Jürgen Schönwälder
Measuring YouTube Content Delivery over IPv6
IETF 99 Measurements and Analysis for Protocols Working Group, Prague, Jul 2017
<https://goo.gl/YbyqoD>

Vaibhav Bajpai, Jürgen Schönwälder
Measuring the Effects of Happy Eyeballs
RIPE 73 IPv6 Working Group, Madrid, Oct 2016
<https://ripe73.ripe.net/archives/video/1467>

Vaibhav Bajpai, Steffie Jacob Eravuchira, Jürgen Schönwälder, Sam Crawford
Measuring Webpage Similarity from Dual-Stacked Hosts
RIPE 72 Plenary, Copenhagen, May 2016
<https://ripe72.ripe.net/archives/video/126>

Vaibhav Bajpai, Steffie Jacob Eravuchira, Jürgen Schönwälder, Robert Kisteleki, Emile Aben
Vantage Point Selection for IPv6 Measurements: Benefits and Limitations of RIPE Atlas Tags
MAT Working Group Meeting at RIPE 72, Copenhagen, May 2016
<https://ripe72.ripe.net/archives/video/167>

Vaibhav Bajpai
Measuring IPv6 Performance
DE-CIX, Frankfurt, April 2016.
<http://vaibhavbajpai.com/documents/talks/v6-performance-decix-2016.pdf>

Marcelo Bagnulo, Trevor Burbridge, Sam Crawford, Jürgen Schönwälder, Vaibhav Bajpai
Large Measurement Platform Protocol
LMAP Working Group Meeting at IETF 91, Honolulu, November 2014.
<http://www.ietf.org/proceedings/91/slides/slides-91-lmap-8.pdf>

Steffie Jacob Eravuchira, Vaibhav Bajpai, Jürgen Schönwälder
Measurement Research within the Python3 Ecosystem
MAT Working Group Meeting at RIPE 69, London, November 2014
<https://ripe69.ripe.net/archives/video/10125>

Vaibhav Bajpai, Steffie Jacob Eravuchira, Jürgen Schönwälder
Lessons Learned From Using the RIPE Atlas Platform for Measurement Research
MAT Working Group Meeting at RIPE 68, Warsaw, May 2014.
<https://ripe68.ripe.net/archives/video/240>

Vaibhav Bajpai, Jürgen Schönwälder
Measuring TCP Connection Establishment Times of Dual-Stacked Web Services
IRTF NMRG Workshop on Large-Scale Network Measurements at CNSM 2013, Zürich, October 2013.
<http://goo.gl/3ACsAA>

Vaibhav Bajpai, Johannes Schauer, Corneliu Claudiu Prodescu, Jürgen Schönwälder
NFQL: A Tool for Querying Network Flow Records
IRTF NMRG Workshop on NetFlow/IPFIX at IETF 87, Berlin, July 2013
<http://www.ietf.org/proceedings/87/slides/slides-87-nmrg-0.pdf>

Vaibhav Bajpai, Jürgen Schönwälder
Measuring the Effects of Happy Eyeballs
v6ops Working Group Meeting at IETF 87, Berlin, July 2013
<http://www.ietf.org/proceedings/87/slides/slides-87-v6ops-8.pdf>

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

TUTORIALS

Vaibhav Bajpai, Nikolay Melnikov
Large-Scale Measurement Platforms
Autonomous Infrastructure, Management & Security (AIMS), Barcelona, June 2013.
<http://cnds.eecs.jacobs-university.de/tutorials>

INVITED SEMINARS

Coordinator:

- MIR. *Munich Internet Research Retreat*
- Dagstuhl Seminar (#16012). *Global Measurement Practice and Experience*

Ratenhaslach, 2017
Wadern, 2016

Participant:

- MIR. *Munich Internet Research Retreat*
- CM Doctoral Retreat. *TU Munich Connected Mobility Doctoral Retreat*
- Leone/IETF/BBF Workshop. *Large-scale Measurements*
- Dagstuhl Seminar (#13472). *Global Measurement Framework*

Ratenhaslach, 2016
Ratenhaslach, 2016
Dublin, 2014
Wadern, 2013

OPEN SOURCE CONTRIBUTIONS

- [simweb](#), A tool to measure similarity of webpages delivered over IPv4 and IPv6
- [nfql](#), A C implementation of the network flow query language
- [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.
- [scamper](#), A scalable and extensible packet prober for active measurement of the Internet
- [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

HONORS	– RIPE RACI fellowship to attend RIPE 66	2013
	– Graduated with a 1.0 grade on the masters thesis, 1.64 overall GPA in masters	2012
	– Graduated as a top student of the class (80.84%) in bachelors	2009
	– Ranked 9 th amongst bachelor freshmen from 600 colleges affiliated with university	2005
	– Graduated as a top student of the class (3 rd in city) in XII (93.4%)	2005
	– Merit certificate for 100% marks in Computer Science in XII	2005
	– Graduated as a top student of the class in X (86.0%)	2003
	– Merit certificate for 100% marks in Science in X (felicitated by the State Govt)	2003
– All-India merit position 35 th in Junior Mathematics Olympiad	2002	

ACTIVE PRESENCE	Memberships
	– IEEE Student Membership
	– IEEE Communications Society Membership
	– Internet Society Membership
	– SIGCOMM Membership
	– IFIP TC6 Working Group 6.6 Membership

LANGUAGES	– English	fluent
	– Hindi	native
	– German	A1 level

REFERENCES	Jürgen Schönwälder Jacobs University Bremen, DE j.schoenwaelder@jacobs-university.de	Jörg Ott Technische Universität München, DE ott@in.tum.de
	Philip Eardley BT Research, UK philip.eardley@bt.com	Sam Crawford SamKnows Limited, UK sam@samknows.com
	Filip De Turck Ghent University, BE filip.deturck@ugent.be	