

Dr. Amreesh D. Phokeer

CONTACT INFORMATION	phokeer@isoc.org www.linkedin.com/in/amreeshphokeer amreesh.github.io
ABOUT ME	<p>My research interests are in the broad area of computer networking, security, and telecommunication policy, with an emphasis on Internet measurements. I am focused on efforts around designing new tools and techniques to study the global health of the Internet including Internet resilience, routing security issues, Internet shutdowns, and other market trends that impact the growth of the Internet. With over 15 years of experience in Internet engineering, I have an in-depth understanding of Internet protocols. At AFRINIC, I have been involved in the design and deployment of core security frameworks namely RPKI and DNSSEC. I have experience in supervising doctoral and masters theses as well as research fellowships.</p>
AREAS OF EXPERTISE	Web and network performance, Internet protocols, Internet Policy Formulation, Risk Assessment, Team and Project Leadership.
EDUCATION	<hr/> <p>Ph.D. in Computer Science 2021 <i>University of Cape Town, South Africa</i> Supervisory Committee: David Johnson, Melissa Densmore, Nick Feamster Research Areas: Internet performance evaluation in developing regions</p> <p>M.Sc. in Information Security (Distinction) 2013 <i>Royal Holloway, University of London, UK</i> Advisor: Keith Martin Thesis: RPKI adoption challenges</p> <p>Diplôme d'Ingénieur (M.S.) (Concours Mines-Télécom) 2008 <i>Telecom Nancy, University of Lorraine, France</i></p> <hr/>
WORK EXPERIENCE	<p>Internet Society (ISOC) <i>Internet Measurement and Data Expert</i> 2021 to present</p> <p>Currently leading the Measuring the Internet (Pulse) project at ISOC. I am a Subject Matter Expert in the areas of Internet shutdowns, Internet concentration, Internet resilience, Internet Governance and Internet policy. Designed and built the Internet Resilience Index. Also leading the Pulse Research fellowship program.</p> <p>African Network Information Center (AFRINIC) <i>Research Manager</i> 2014 to 2021 <i>Software Engineering Manager</i> 2011 to 2014</p> <p>Responsible for Internet security and measurement research projects. Collaborated with a team of international researchers to conduct in-depth Internet measurement campaigns to better understand the African Internet Infrastructure development and challenges from security, performance, and economic perspectives. Managed the AFRINIC research</p>

program to foster relationships with academic institutions. Designed and implemented the DNSSEC and RPKI infrastructure at AFRINIC.

National Institute of Standards and Technology (NIST)

Guest Researcher

2008 to 2010

Assisted Computational biologists in developing tools and techniques for better image analysis. Integrated legacy applications into modern image processing tools. Developed a project management portal to help researchers keep track of project deliverables, finance and other resources.

COMMUNITY
WORK

Organizing Committee Membership

ACM IMC - Diversity co-chair	2024
ACM COMPASS - Industry and Practitioner co-chair	2023
EAI Africomm - General Chair	2020

Program Committee Membership

USENIX SECURITY	2022, 2023, 2024,
ACM IMC	2019, 2020, 2023, 2024
PAM	2022
TMA IFIP	2021, 2023, 2024
ACM SIGCOMM CCR (Additional)	2020
ACM AINTEC	2022, 2023, 2024
JSys Journal	2022 - Present

Other Forums

GFCE Research Committee - Member	2020, 2021
Mauritius Cybersecurity Committee - Member	2023 - Present
Mauritius Internet Exchange Point Board - Vice Chairman	2022 - Present

PUBLICATIONS

Journal

1. Anirudh Tagat, **Amreesh Phokeer**, and Hanna Kreitem. 2024. Net Loss: An econometric method to measure the impact of Internet shutdowns. ACM Journal Computing and Sustainable Societies (April 2024).
2. Sen, R., Ahmad, S., **Phokeer, A.**, Farooq, Z.A., Qazi, I.A., Choffnes, D. and Gummadi, K.P., 2017. Inside the Walled Garden: Deconstructing Facebooks Free Basics Program. ACM SIGCOMM Computer Communication Review, 47(5). **[BEST CCR AWARD]**

Technical reports

1. Johnson, D., Cloete, L., Hadzic, S., Kiden, S., Rens, A. and **Phokeer, A.**, 2022. African Open Source Digital Infrastructures: Evaluating the Landscape. Research ICT Africa 30 June 2022.
2. **Phokeer, A.**, Chege, K., Chavula, J., Elmokashfi, A. and Gueye, A., 2021. Measuring Internet Resilience in Africa (Mira). Internet Society.

Conference

1. Livadariu, I., Fontugne, R., **Phokeer, A.**, Candela, M., Stucchi, M., A tale of two synergies: Uncovering RPKI practices for RTBH at IXPs, Passive and Active Measurement Conference 2024.

2. Holterbach, T., Alfroy, T., **Phokeer, A.**, Dainotti, A. and Pelsser, C., A System to Detect Forged-Origin BGP Hijacks. In 21st USENIX Symposium on Networked Systems Design and Implementation (NSDI 24)
3. Li, W., Lin, Z., Ashiq, M.I., Aben, E., Fontugne, R., **Phokeer, A.** and Chung, T., 2023, October. RoVista: Measuring and Analyzing the Route Origin Validation (ROV) in RPKI. In Proceedings of the 2023 ACM on Internet Measurement Conference (pp. 73-88).
4. Fontugne, Romain; **Phokeer, Amreesh**; Pelsser, Cristel; Vermeulen, Kevin; Bush, Randy; RPKI Time-of-flight: tracking delays in the management and data planes, Passive and Active Measurement Conference 2023.
5. Hemanthindra, A., **Phokeer, A.**, Ramsurrun, V., Katsina, P., Anantwar, S. and Seeam, A.K., 2020, December. DNSSEC as a service - A prototype implementation. In 2020 32nd International Conference on Microelectronics (ICM) (pp. 1-4). IEEE.
6. Arouna, A., **Phokeer, A.** and Elmokashfi, A., 2021. A first look at the Africans ccTLDs technical environment. In 12th EAI International Conference, AFRICOMM 2020, December 2-4, 2020, Proceedings 12 (pp. 305-326).
7. Akanho, Y., Alassane, M., Hounghbadji, M. and **Phokeer, A.**, 2021. African nameservers revealed: characterizing DNS authoritative nameservers. In 12th EAI International Conference, AFRICOMM 2020, December 2-4, 2020, Proceedings 12 (pp. 327-344).
8. Kristoff, John; Bush, Randy; Kanich, Chris; Michaelson, George; **Phokeer, Amreesh**; Schmidt, Thomas C; Whlisch, Matthias; On Measuring RPKI Relying Parties, Proceedings of the ACM Internet Measurement Conference 484-491 2020
9. **Phokeer, Amreesh**; Chavula, Josiah; Johnson, David; Densmore, Melissa; Tyson, Gareth; Sathiaselalan, Arjuna; Feamster, Nick; On the potential of Google AMP to promote local content in developing regions, 2019 11th International Conference on Communication Systems & Networks (COMSNETS) 80-87 2019 IEEE
10. Isah, Musab; **Phokeer, Amreesh**; Chavula, Josiah; Elmokashfi, Ahmed; Asrese, Alemnew Sheferaw; State of internet measurement in Africa-A survey, International Conference on e-Infrastructure and e-Services for Developing Countries, 121-139, 2019 Springer, Cham
11. Formoso, Agustin; Chavula, Josiah; **Phokeer, Amreesh**; Sathiaselalan, Arjuna; Tyson, Gareth; Deep diving into africa's inter-country latencies, IEEE INFOCOM 2018-IEEE Conference on Computer Communications 2231-2239 2018 IEEE
12. Calandro, Enrico; Chavula, Josiah; **Phokeer, Amreesh**; Internet development in Africa: a content use, hosting and distribution perspective, International Conference on e-Infrastructure and e-Services for Developing Countries 131-141 2018 Springer, Cham
13. Chavula, Josiah; **Phokeer, Amreesh**; Calandro, Enrico; Performance barriers to cloud services in Africas public sector: A latency perspective, International Conference on e-Infrastructure and e-Services for Developing Countries 152-163 2018 Springer, Cham
14. Singh, Siddharth; Nanda, Vedant; Sen, Rijurekha; Ahmad, Sohaib; Sengupta, Satadal; **Phokeer, Amreesh**; Farooq, Zaid Ahmed; Khan, Taslim Arefin; Kumaragaguru, Ponnurangam; Qazi, Ihsan Ayyub; An empirical analysis of facebook's free basics,

Proceedings of the 2017 ACM SIGMETRICS/International Conference on Measurement and Modeling of Computer Systems 37-38 2017

15. Chavula, Josiah; **Phokeer, Amreesh**; Formoso, Agustin; Feamster, Nick; Insight into Africa's country-level latencies, 2017 IEEE AFRICON 938-944 2017 IEEE
16. Sen, Rijurekha; Pirzada, Hasnain Ali; **Phokeer, Amreesh**; Farooq, Zaid Ahmed; Sengupta, Satadal; Choffnes, David; Gummadi, Krishna P; On the free bridge across the digital divide: Assessing the quality of facebook's free basics service, Proceedings of the 2016 Internet Measurement Conference 127-133 2016
17. Hadzic, Senka; **Phokeer, Amreesh**; Johnson, David; TownshipNet: A localized hybrid TVWS-WiFi and cloud services network, 2016 IEEE International Symposium on Technology and Society (ISTAS) 01-Jun 2016 IEEE
18. **Phokeer, Amreesh**; Densmore, Melissa; Johnson, David; Feamster, Nick; A first look at mobile internet use in township communities in South Africa, Proceedings of the 7th Annual Symposium on Computing for Development 01-Oct 2016
19. **Phokeer, Amreesh**; Aina, Alain; Johnson, David; DNS Lame delegations: A case-study of public reverse DNS records in the African Region, International Conference on e-Infrastructure and e-Services for Developing Countries 232-242 2016 Springer, Cham
20. **Phokeer, Amreesh**; Aina, Alain; A survey of anti-spam mechanisms and their usage from a Regional Internet Registry's perspective, 2016 IST-Africa Week Conference 01-Nov 2016 IEEE

Posters

1. **Phokeer, Amreesh**; Hadzic, Senka; Nitschke, Eric; Van Zyl, Andre; Johnson, David; Densmore, Melissa; Chavula, Josiah; iNethi Community Network: A first look at local and Internet traffic usage, Proceedings of the 3rd ACM SIGCAS Conference on Computing and Sustainable Societies 342-344 2020
2. Calandro, Enrico; Chavula, Josiah; **Phokeer, Amreesh**; The impact of remote hosting on Internet performance, 2018 CPRSOUTH

HONORS

Fellowships

- Heidelberg Laureate Forum Sep 2023
- CISP Research Fellowship Apr 2022

Awards

- IEEE INFOCOM 2018 Best-in-Session Presentation Award May 2018
- IEEE AFRICON 2017 Most Outstanding Paper Award Nov 2017

Scholarships

- PhD Scholarship from Hasso-Plattner Institute, Germany Feb 2016 - Jun 2019
- Royal Holloway Scholarship for MSc in Information Security Dec 2012 - Dec 2013
- Merit French Government postgraduate Scholarship Jun 2005 - Jul 2008

Other

- Ranked 16th at National A-Level Cambridge Exams in Mauritius Feb 2003

SUPERVISORY & TEACHING EXPERIENCE	Ph.D. Project Supervision	
	• Martin Thody (Uni. of Cape Town, co-advised by Josiah Chavula) 2022 to Present	
	Pulse Research fellowship mentees	
	• Sadia Nourin (Uni. of Maryland, Topic: Censorship measurements)	2023
	• Aravindh Raman (Telefonica Research, Topic: LEO satellite performance)	2023
	• Alagappan Ramanathan (UC Irvine, Topic: Internet resilience)	2023
	MANRS Research fellowship mentees	
	• Thomas Holterbach (Uni. of Strasbourg, Topic: Forged origin hijacks)	2023
	• Jediel Adefoulou (IFRI, Topic: MANRS Supply chain visualization)	2023
	• Ioana Livadariu (Simula Research, Topic: RTBH and RPKI)	2022
	• Tijay Chung (Virginia Tech, Topic: ROV measurements)	2022
	• Zubair Sediqi (MPI, Topic: RPKI Validation measurements)	2022
	• Romain Fontugne (IIJ Labs, Topic: Routing Security)	2021
	• Dibya Khatiwada (PCH, Topic: Routing Security)	2021
	M.S. Project Supervision	
	• CMU - ML-based approach to predict Internet Shutdowns	2023
	• CMU - Using nightlights to infer Internet shutdowns	2023
	• CMU - Methods for understanding traffic locality	2022
	• CMU - Internet Resilience Composite Indicator	2021
	Teaching	
SOFTWARE SKILLS	• Machine Learning, Curtin University (Mauritius)	April 2024
	• Networking course, University of Cape Town	Feb 2017
	• Measurements and Internet Protocol, University of Cape Town	June 2017
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	Computer Programming	
	• C, C++, Java, JavaScript, Python, Perl, PHP, UNIX shell scripting and others	
	• Jupyter, pandas, numpy R, matplotlib, d3	
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	MEMBERSHIPS	
	• IEEE Membership	
LANGUAGES	• IEEE Communication Society Membership	
	• Internet Society Membership	
	<hr/>	
	• English	Fluent
	• French	Native
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REFERENCES	Available upon request.	