Dr. Ir. Roland M. van Rijswijk-Deij

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Education

02/2014 – 06/2017 **Doctor of Philosophy** in Computer Science (*cum laude*)
University of Twente, Enschede, The Netherlands

09/1995 – 08/2001 **Master of Science** in Computer Science
University of Twente, Enschede, The Netherlands

Professional Experience

11/2018 – present **NLnet Labs**, Amsterdam, The Netherlands
Principal Scientist

09/2008 – 10/2018 **SURFnet**, Utrecht, The Netherlands
R&D Project Manager and Researcher

11/2006 – 08/2008 **InTraffic**, Nieuwegein, The Netherlands
Lead Software Designer

10/2002 – 11/2006 **AET Europe**, Arnhem, The Netherlands
Senior Software Engineer

01/2001 – 10/2002 **Royal Philips Electronics**, Eindhoven, The Netherlands
Software and Test Engineer

09/2000 – 12/2000 **British Telecommunications (BT) R&D**, Ipswich, United Kingdom
Industrial Traineeship at the Security Lab

Academic Positions

01/2020 – present **University of Twente**, Enschede, The Netherlands
Associate Professor (part-time)
In the Design and Analysis of Communication Systems Group,
Faculty of Electrical Engineering, Maths and Computer Science

11/2017 – 12/2019 **University of Twente**, Enschede, The Netherlands
Assistant Professor (part-time)

07/2017 – 10/2017 **University of Twente**, Enschede, The Netherlands
Guest Researcher

02/2014 – 06/2017 **University of Twente**, Enschede, The Netherlands
Ph.D. Candidate

02/2016 – 03/2016 **CAIDA, University of California at San Diego**, United States
Visiting Researcher

02/2013 – 02/2014 **Radboud University**, Nijmegen, The Netherlands
Ph.D. Candidate

Selected Publications (full list see https://rijswijk.github.io/publication/)

[1] M. Müller, M. Thomas, D. Wessels, W. Hardaker, T. Chung, W. Toorop and R. van Rijswijk-Deij. *Roll, Roll, Roll your Root: A Comprehensive Analysis of the First Ever DNSSEC Root KSK Rollover.* In Proceedings of the 19th ACM SIGCOMM Internet Measurement Conference (IMC 2019). Amsterdam, The Netherlands: ACM Press. *(Acceptance Rate: 19.8%)*

[2] T. Chung, R. van Rijswijk-Deij, B. Chandrasekaran, D. Choffnes, D. Levin, B.M. Maggs, A. Mislove and C. Wilson. *A Longitudinal, End-to-End View of the DNSSEC Ecosystem.* In Proceedings of the 26th USENIX Security Symposium (USENIX Security '17). Vancouver, BC, Canada: USENIX Association. *(Acceptance Rate: 16.3%)*

[3] R. van Rijswijk-Deij, K. Hageman, A. Sperotto, and A. Pras. *The Performance Impact of Elliptic Curve Cryptography on DNSSEC Validation.* IEEE/ACM Transactions on Networking, vol. 25, no. 2, 2017. *(Impact Factor 2016/2017: 3.376)*

[4] R. van Rijswijk-Deij, M. Jonker, A. Sperotto, and A. Pras. *A High-Performance, Scalable Infrastructure for Large-Scale Active DNS Measurements.* IEEE Journal of Selected Areas in Communications, vol. 34, no. 7, pp. 1877–1888, 2016. *(Impact Factor 2016/2017: 8.085)*

[5] R. van Rijswijk-Deij, A. Sperotto, and A. Pras. *DNSSEC and Its Potential for DDoS Attacks.* In Proceedings of ACM IMC 2014, 2014. *(Acceptance Rate: 22.9%)*

Awards

2020 **IEEE Computer Society TCI Rising Star Award**
Awarded for high-impact technical contributions to the Internet research community
Presented during the ACM/IEEE Symposium on Edge Computing (SEC), November 11–13, 2020

Kees Schouhamer Immink Award
For the best Ph.D. thesis in computer and communication science
Awarded by the KHMW Royal Holland Society of Sciences and Humanities

2019 **ACM IMC 2019 Distinguished Paper Award**
Paper: *"Roll, Roll, Roll your Root: A Comprehensive Analysis of the First Ever DNSSEC Root KSK Rollover"* [1]
Presented at the Internet Measurement Conference, October 21-23, 2019, Amsterdam, The Netherlands

PAM Best Dataset Award
Paper: *"A First Look at QNAME Minimization in the Domain Name System"*
Presented at Passive and Active Measurements, March 27-29, 2019, Puerto Varas, Chile

IRTF Applied Networking Research Prize (ANRP)
Paper: *"Understanding the Role of Registrars in DNSSEC Deployment"*
Presented at IETF 105, July 20-26, 2019, Montréal, Canada

2018 **IFIP/IEEE NOMS Best Paper Award**
Paper: *"Melting the Snow: Using Active DNS Measurements to Detect Snowshoe Spam Domains"*
Presented at IFIP/IEEE NOMS, April 23-27, 2018, Taipei, Taiwan

TMA Best Open Dataset Award
Paper: *"Passive Observations of a Large DNS Service: 2.5 Years in the Life of Google"*
Presented at TMA 2018, June 25-29, 2018, Vienna, Austria

2017 **USENIX Security Distinguished Paper Award**
Paper: *"A Longitudinal, End-to-End View of the DNSSEC Ecosystem"* [2]
Presented at the 26th USENIX Security Symposium, August 16-18, 2017, Vancouver, BC, Canada

IRTF Applied Networking Research Prize (ANRP)
Paper: *"The Performance Impact of Elliptic Curve Cryptography on DNSSEC Validation"* [3]
Presented at IETF 100 in Singapore, November 2017

2015 **IRTF Applied Networking Research Prize (ANRP)**
Paper: *"DNSSEC and Its Potential for DDoS Attacks"* [5]
Presented at IETF 94 in Yokohama, Japan, November 2015

2014 **ACM SIGCOMM IMC Community Contribution Award**
Paper: *"DNSSEC and Its Potential for DDoS Attacks"* [5]
Presented at ACM SIGCOMM IMC 2014, Vancouver, BC, Canada, November 2014

Short Biography

Roland van Rijswijk-Deij was born in Arnhem, The Netherlands, on March 17th, 1977. He holds an M.Sc. degree in Computer Science from the University of Twente, Enschede, The Netherlands (2001). Roland received a *cum laude* Ph.D. degree from the University of Twente in June 2017, for his thesis entitled "Improving DNS Security: a Measurement-Based Approach". Roland has a background in embedded systems, applied cryptography and networking. He previously worked for British Telecom (2000, traineeship), Royal Philips Electronics (2001–2002), AET Europe (2002–2006), InTraffic (2006–2008) and SURFnet (2008–2018).

Since 2018, Roland is principal scientist at NLnet Labs, a not-for-profit foundation that performs research on, and develops open source software for, the core protocols of the Internet. Past innovation projects initiated by Roland have focused on DNS, DNSSEC, detecting and mitigating DDoS attacks, IPv6 and many other topics. Roland regularly presents his work in international networking venues, such as TNC, Internet2 conferences, IETF meetings, ICANN meetings, RIPE meetings and NANOG.

Next to his work at NLnet Labs, Roland is associate professor of computer network security in the Design and Analysis of Communication Systems group at the University of Twente.

Ph.D. Students

In progress:
Leandro Bertholdo (planned 2023)
On using anycast to improve mitigation of DDoS attacks

Raffaele Sommese (planned late 2022)
On Mapping DNS DDoS Vulnerabilities to Improve Protection and Prevention (MADDVIPR)

Niels Rodday (planned early 2022 – joint Ph.D. with the Universität der Bundeswehr, Munich)
On Security of Inter-domain Routing

Olivier van der Toorn (planned late 2021)
On Threat Identification Using Active DNS Measurements (TIDE)

Moritz Müller (planned first half of 2021)
On future-proofing DNS security and resilience

Graduated:
Wouter B. de Vries (2019)
Improving Anycast with Measurements

Master Students (links to theses via https://rijswijk.github.io/#students)

Boudewijn Ector (2009), Niels Monen (2011), Gijs van den Broek (2012), Sean Rijs (2014), Kaspar Hageman (2015), Romanos Dodopoulos (2015), Tho Le (2017), Olivier van der Toorn (2017), Gijs Rijnders (2018), Caspar Schutijser (2018)

Bachelor Students (links to theses via https://rijswijk.github.io/#students)

Remy Bien (2014), Jeroen Vollenbrock (2016), Eva van den Eijnden (2017), Breus Blaauwendraad (2017), J.J. Yu (2017), Jorik van Nielen (2020), Bjorn Oude Roelink (2020), Anja Scherjon (2020)

Languages

English: near native/fluent (C2 level, independent evaluation available)
German: proficient in understanding, adequate in speaking and writing (B2 level)
French: good working knowledge (between B1 and B2 level)
Spanish: basic skills (A2 level)