

Dr. Melanie Rose Rieback

Vrije Universiteit
Department of Computer Science
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LANGUAGES ◇ English (native speaker), Dutch (fluent).

- EDUCATION ◇ **Vrije Universiteit**, Amsterdam, The Netherlands. 2003-2008
Ph.D. in Computer Science
Research topic: *Security and Privacy of Radio Frequency Identification*.
Thesis advisor: Prof. Andrew S. Tanenbaum
- ◇ **Technical University of Delft**, Delft, The Netherlands. 2001-2003
M.Sc. in Computer Science.
Thesis project: *Meta-alert Correlation Engine*.
Project involved designing and implementing an expert system to manage and correlate Intrusion Detection alerts.
- ◇ **University of Miami**, Coral Gables, Florida. 1996-2000
B.Sc. in Biology/Computer Science (Chemistry and Math minors).
Cum Laude. General Honors program. Provost's and President's Honor Roll.
Independent research project: Project involved using linear programming to solve optimization problems in molecular modeling.

WORK ◇ **Vrije Universiteit, Amsterdam** November 2007 – Present
EXPERIENCE Assistant Professor of Computer Science (Computer Systems group).

· **Research highlights**

- Wrote the world's first proof-of-concept "computer virus" for RFID
- Designed and prototyped the world's first "RFID Firewall"
- Project Leader: RFID Guardian (Open-Source RFID Security & Privacy Platform)
 - * Conceived and developed the research concept
 - * Acquired approx. 800k Euro in funding over project lifetime
 - * Assembled and led a team that built 4 revisions of HW + firmware + SW
 - * Commissioned manufacture of RF40 HW units in Taiwan
 - * Assembled and led business team, to commercialize RF40
- Received multiple awards + massive press coverage for efforts

· **Other highlights:**

- 3 years of teaching (Operating Systems: MINIX 3)
- Core team, 'Intertain' Ubiquitous Computing Laboratory @ VU
- Led several ICT4D projects (Niger Delta Watch, Anti-Circumvention in Iran)
- Member of VPR (PR and Outreach) Team for Computer Science
- Advised and mentored dozens of MSc./BSc. students

- ◇ **MIT Center for Genome Research / Whitehead Institute** (June 2000 – July 2001)
Human Genome Project. Software development and troubleshooting of high-throughput genomic sequencing “pipeline”. Heavily used Perl, Oracle (PL/SQL), and UNIX shell programming.
- ◇ **Compugen.** (June 1999-Sept 1999)
Designed (and implemented in C) an algorithm to take two “contigs” of genetic information (DNA, mRNA) as input, and find all the differences between them. This was in order to trace the origins of modified contigs upon new database version releases, and evaluate changes in the Assembly algorithm. Also wrote an accompanying statistical analysis tool in Perl.
- ◇ **Siemens Telecom Networks** (June 1998 – Aug 1998.)
VB and Access database development, system testing of IP Networks, Java development of System Engineering Tool.
- ◇ **Siemens Telecom Networks** (June 1997 – Aug 1997.)
VC++ programming, Web page development, and Internet market analysis
- ◇ **Sunrise Symphonic Pops Orchestra** (March 1995 – Nov 1997.)
Attended all rehearsals and performances. Performed Cimarosa Concerto for Oboe and Strings with the orchestra on March 17, 1996.

- SPECIAL AWARDS AND HONORS
- ◇ **Recent Awards**
 - Women in IT Award (Finalist): ICT Professional of the Year 2010
 - Viva 400, 2010: 400 most successful women in the Netherlands
 - Keynote Speaker: Conference on RFID Security 2007
 - IEEE PerCom 2006: Best Paper for High Impact Award
 - USENIX Lisa 2006: Best Paper Award
 - Netherlands Science Foundation (NWO) I/O Prize 2006
 - Finalist for Dutch Internet Society (ISOC) Award 2006 (Category: Security and Privacy)
 - VU Media Award 2006: Category "Rising Star" (Mediakomeet)
 - ◇ **Older Awards**
 - Barry M. Goldwater scholarship winner in Mathematics, Science, and Engineering 1999
 - University of Miami: Joseph G. Hirschberg Physics Prize 1997
 - University of Miami: Henry King Stanford scholarship winner 1996
 - Siemens Stromberg-Carlson A.P.E. scholarship winner 1996
 - AP Scholar with Distinction 1996
- BOOK CHAPTERS
- ◇ M.R. Rieback, B. Crispo, A.S. Tanenbaum. "RFID Crimeware." *Crimeware*. Editors: Zulfikar Ramzan, Markus Jakobsson, Addison-Wesley, 2007.
- REFEREED PAPERS
- ◇ M. Wagenaar, M.R. Rieback, "Mobile Human Rights Reporting in the Niger Delta", Mobile Communication Technology for Development Conference (M4D2010), Kampala, Uganda, Nov 2010.
 - ◇ A. Mitrokotsa, M.R. Rieback, A.S. Tanenbaum. "Classifying RFID Attacks and Defenses", Special Issue on Advances in RFID Technology, Information Systems Frontiers, July, 2009.
 - ◇ M.R. Rieback. "Security and Privacy of Radio Frequency Identification, Ph.D. Dissertation, Sept 2008.
 - ◇ A. Mitrokotsa, M.R. Rieback, A.S. Tanenbaum "Classification of RFID Attacks" 2nd Intl. Workshop on RFID Technology (IWRT08), Barcelona, Spain, June 2008.
 - ◇ M.R. Rieback, G.N. Gaydadjiev, B. Crispo, R.F.H. Hofman, A.S. Tanenbaum. "A Platform for RFID Security and Privacy Administration." 20th USENIX/SAGE Large Installation System Administration Conference (LISA 2006), Washington DC, December 2006. **Best Paper Award.**
 - ◇ M.R. Rieback, Patrick N.D. Simpson, B. Crispo, A.S. Tanenbaum. "RFID Malware: Design Principles and Examples" Pervasive and Mobile Computing (PMC) Journal, vol. 2(4): 405-426, Elsevier, 2006.
 - ◇ M.R. Rieback, B. Crispo, A.S. Tanenbaum. "RFID Malware: Truth vs. Myth." IEEE Security and Privacy, vol. 4(4):70-72, 2006.
 - ◇ M.R. Rieback, B. Crispo, A.S. Tanenbaum, "Privacy Protection in the Age of RFID" (Poster). 5th USENIX/NLnet System Administration and Network Engineering Conference (SANE 2006), Delft, The Netherlands, May, 2006.
 - ◇ M.R. Rieback, B. Crispo, A.S. Tanenbaum. "Is Your Cat Infected with a Computer Virus?" Proc. 4th IEEE Intl. Conf. on Pervasive Computing and Communications. (IEEE PerCom 2006), Pisa, Italy, March 2006. **Best Paper Award.**
 - ◇ M.R. Rieback, B. Crispo, A.S. Tanenbaum. "The Evolution of RFID Security." IEEE Pervasive Computing, vol. 5(1):62-69, 2006.

- ◇ M.R. Rieback, B. Crispo, A.S. Tanenbaum. “RFID Guardian: A Battery-Powered Mobile Device for RFID Privacy Management.” Proc. 10th Australasian Conference on Information Security and Privacy. (ACISP 2005), Brisbane, Australia, July 2005.
- ◇ M.R. Rieback, B. Crispo, A.S. Tanenbaum. “Uniting Legislation with RFID Privacy-Enhancing Technologies.” Proc. 3rd Conference on Security and Protection of Information. (SPI 2005), Brno, Czech Republic, May 2005.
- ◇ M.R. Rieback, B. Crispo, A.S. Tanenbaum. “Keep on Blockin’ in the Free World: Personal Access Control for Low-Cost RFID Tags.” Proc. 13th Cambridge International Workshop on Security Protocols, April 2005.
- ◇ The International Human Genome Sequencing Consortium*. “Initial sequencing and analysis of the human genome”. Nature 2001 409:860-921.

* = See full author list, under Whitehead Institute, MIT Center for Genome Research:
<http://www.nature.com/nature/journal/v409/n6822/extref/409860aa.doc>

SELECTED
INVITED
TALKS

- ◇ Infosecurity.nl, Utrecht, November 2010.
- ◇ Google Tech Talk, Mountain View, CA, October 2010.
- ◇ Digital Rights in Iran, Stanford University, Palo Alto, CA, October 2010.
- ◇ Invited Participant, Internet at Liberty, Budapest, Hungary, September 2010.
- ◇ Technical University of Delft, April 2010.
- ◇ SACOSE Workshop, Toulon, FR, April 2010.
- ◇ Seattle Area System Administrators Guild, Seattle, WA, March 2010.
- ◇ CanSecWest, Vancouver, March 2010.
- ◇ Panel Discussion, ICTDelta, Rotterdam, March 2010.
- ◇ Meeting of the Minds Panel, Amsterdam, February 2010.
- ◇ Internet of Things Council Launch, Brussels, Belgium, December 2009.
- ◇ Securiosity, Nijmegen, November 2009.
- ◇ Hogeschool Inholland, Alkmaar, October 2009.
- ◇ AusCERT 2009, Gold Coast, Australia, May 2009.
- ◇ RFID Lezing, Willem de Kooning Academie, Rotterdam, Mar 2009.
- ◇ OV Chipkaart Scientific Forum, Amersfoort, Feb 2009.
- ◇ LIFT, Geneva, Switzerland, Feb 2009.
- ◇ XS4ALL Fear It, Fix It (FIFI) Conference, Amsterdam, November 2008.
- ◇ DEX Conference, Driebergen, November 2008.
- ◇ Vliegende Hollander, Amsterdam, November 2008.
- ◇ Tribler Workshop, Delft, October, 2008.
- ◇ Digital Experience, Bunnik, September 2008.
- ◇ SecureAmsterdam Conference, Amsterdam, July 2008.
- ◇ Eclectic Tech Carnival, Amsterdam, June 2008.
- ◇ TERENA Networking Conference, Bruges, Belgium, May 2008.
- ◇ Modern Talking: RFID Workshop, Linz, Austria, April 2008.
- ◇ Daimler Security Conference, Stuttgart, Germany, April 2008.
- ◇ Panel: RFID Security and Privacy: Long-term Research or Short-term Tinkering?, First ACM Conference on Wireless Security (WiSec), Alexandria, VA, April 2008.

- ◇ **RFID Security Workshop: From Theory to Practice**, Lorentz Center, Leiden, Netherlands, March 2008.
- ◇ ISACA Roundtable, Breukelen, Netherlands, March 2008.
- ◇ **RFID: Onbegrensde Kansen en Bedreigingen**, KIVI-NIRIA, Den Haag, Netherlands, February 2008.
- ◇ **RFID Security Workshop: From Theory to Practice**, Baltimore, MD, January 2008.
- ◇ **DeepSec**, Vienna, Austria, November 2007.
- ◇ **GovCERT Symposium**, Noordwijk, Netherlands, October 2007.
- ◇ **Recalling RFID**, Amsterdam, Netherlands, October 2007.
- ◇ **Conference on RFID Security**, Malaga, Spain, July 2007. **Opening Keynote**.
- ◇ **American Library Association (ALA) Annual Conference**, Washington DC, June 2007.
- ◇ **19th Annual FIRST Conference**, Seville, Spain, June 2007.
- ◇ **O'Reilly Emerging Tech Conference**, San Diego, CA, March 2007.
- ◇ **2nd Annual MIS Information Security Summit**, London, England, March 2007.
- ◇ **IT-Defense**, Leipzig, Germany, February 2007.
- ◇ **Infosecurity Italia**, Milan, Italy, February 2007.
- ◇ **Polytechnic University of Milan**, Milan, Italy, February 2007.
- ◇ **Chaos Communication Congress**, Berlin, Germany, December, 2006.
- ◇ **CSAIL**, Massachusetts Institute of Technology, Boston, Massachusetts, December, 2006.
- ◇ **University of Massachusetts at Amherst**, Amherst, Massachusetts, December, 2006.
- ◇ **Tokyo International Security Conference**, Tokyo, Japan, November, 2006.
- ◇ **Mediamatic Institute**, Amsterdam, November, 2006.
- ◇ **University of California at Berkeley**, California, October, 2006.
- ◇ **Security Opus**, San Francisco, California, October, 2006.
- ◇ **Netherlands Science Foundation (NWO)**, Computer Science Platform Annual Event (SIREN), Utrecht, Netherlands, October, 2006.
- ◇ **CAIDA / San Diego Supercomputer Center (UCSD)**, San Diego, California, August 2006.
- ◇ **DefCon 14**, Las Vegas, Nevada, August 2006.
- ◇ **Black Hat Briefings**, Las Vegas, Nevada, August 2006.
- ◇ **Dorkbot**, Gent, Belgium, June 2006.
- ◇ **Information Systems Security Association meeting**, Delft, The Netherlands, June 2006.
- ◇ **Workshop on Security in RFID and Contactless Cards**, SAFE-NL, Delft, The Netherlands, June 2006
- ◇ **Accenture SCCoP presentation series**. May, 2006.
- ◇ **5th USENIX/NLnet System Administration and Network Engineering (SANE 2006)**, Delft, The Netherlands, May, 2006.
- ◇ **1st Workshop on the Theory of Computer Viruses**, LORIA, Nancy, France, May 2006
- ◇ **DIT Seminar Series**, University of Trento, Trento, Italy, Mar. 2006
- ◇ **ICS Seminar Series**, University of Rome "La Sapienza", Rome, Italy, Mar. 2006
- ◇ **CS Colloquium Series**, University of Miami, Coral Gables, FL, Feb. 2006
- ◇ **Raboud University**, Nijmegen, Feb. 2006
- ◇ **Software Freedom Day**, FSF, Tilburg, Sep. 2005

- ◇ **What The Hack**, USENIX/2600, Liempde, Jul. 2005
 - ◇ **Philips Research**, Eindhoven, Mar. 2005
 - ◇ **GNARP Workshop**, Garderen, Feb. 2005
 - ◇ **GNARP Workshop**, Renesse, Mar. 2004
- SELECTED
MEDIA
COVERAGE
- ◇ “Evolutie van de RFID Guardian”, Security.nl, Oct 2010.
 - ◇ “OV-chipkaart hacken voor 500 euro”, Infosecurity Magazine, Sep 2010.
 - ◇ RFID Tags Tracking Everything (Including You), Patrick Kiger, Discovery Channel Blog, Apr 2008.
 - ◇ **Radio Interview**: BNR Nieuwsradio, Apr 2, 2008.
 - ◇ Poederchips in je haar, Ferry Piekart, Algemene Dagblad, Apr 2008.
 - ◇ Race tegen klok voor ov-chip, Vincent Dekker, Trouw, Mar 2008.
 - ◇ **OV Chipkaart press coverage**. 20 articles in Jan 2008, including:
 - Geachte Kamerleden, zo kraak je dus de ov-kaart, de Volkskrant, Jan 2008.
 - Kamer in actie: valt chipkaart nog te redden?, Paul Vereijken and Jeroen Wester, NRC Handelsblad, Jan 2008.
 - Geheime software nekte ov-chip, Michiel van Nieuwstadt, NRC Handelsblad, Jan 2008.
 - ◇ **TV Interview**: NOS Journaal, Jan 2008.
 - ◇ **Radio Interview**: Radio 1, Jan 2008.
 - ◇ “Jam Session: A Design to Block RFID Tags”, Wendy M. Grossman, Scientific American, July 2007.
 - ◇ “Radio Chips and Hacker Tools”, Jan Rahm, Linux Magazine, April 2007.
 - ◇ “RFID Britches: Security Risk?”, Dennis O’Reilly, PC World, April 1, 2007.
 - ◇ “Keeping RFID Tags From Prying Eyes”, RFID Journal, March/April 2007.
 - ◇ “RFID Strategy – RFID Privacy and Security Issues”, Paul Faber, IndustryWeek, January 9, 2007.
 - ◇ “Your Own Personal RFID Firewall”, Annalee Newitz, Popular Science, December 28, 2006.
 - ◇ “RFID Personal Firewall”, Bruce Schneier, Crypto-Gram, December 15, 2006.
 - ◇ **Radio Interview**: BNR Nieuwsradio, August 31, 2006.
 - ◇ “RFID: Readily Fooled Indeed”, Richard Martin, Unstrung, August 30, 2006.
 - ◇ “Computer hackers get lesson on cloning passport, cash card tags”, Glenn Chapman, AFP, August 6, 2006.
 - ◇ “How Secure is RFID?”, Sixto Ortiz, IEEE Computer, July 2006.
 - ◇ “RFID – another technology, another security mess?”, William Knight, Infosecurity Magazine, May/June 2006.
 - ◇ “Embedded Risks”, Peter Neumann, Communications of the ACM, May 2006
 - ◇ “Antwoorden op kamervragen over het RFID virus” (Answering Parliament’s Questions about the RFID Virus), Transcript of discussion, Dutch Ministry of Internal Affairs, 9 May 2006.
 - ◇ **Radio Interview**: Steel on Steel, April 15 2006.
 - ◇ **Radio Interview**: Netherlands Radio 1, April 4, 2006.
 - ◇ “New Research Shows Need for Improved RFID Application Security”, Gartner News Analysis, March 22, 2006.

- ◇ “Study Says Chips in ID Tags Are Vulnerable to Viruses”, John Markoff, New York Times, Page C3, March 15, 2006.
- ◇ “Vervanger streepjescode vatbaar voor virussen”, Michael Persson, De Volkskrant, Page 1, March 15, 2006
- ◇ “Scientists: RFID chips can carry a virus” (March 15, 2006)
The story was picked up by over 200 media outlets including:
 - CNN News, BBC News, Fox News, MSNBC News
 - Reuters, UPI, Washington Post, International Herald Tribune, Sydney Morning Herald
 - Computerworld, PC World, New Scientist, Business Week, Red Herring
 - Slashdot, RFID Journal, Securityfocus, The Register

PROFESSIONAL Academic Service

SERVICE

- Program Co-Chair: RFID Security Workshop: From Theory to Practice
 - PC member: USENIX Large Installation System Administration (2x)
 - PC member: Intl. Workshop on RFID Technology (2x)
 - PC member: NLUUG Spring Conference (2x)
 - PC member: NLUUG 25th Anniversary Conference
 - PC member: NLUUG Fall Conference
 - Reviewer: IEEE Computer
 - Reviewer: IEEE Communications Letters
 - Reviewer: IEEE Transactions on Dependable and Secure Computing
 - Reviewer: IEEE Transactions on Parallel and Distributed Systems
 - Reviewer: IEEE Transactions on Software Engineering
 - Reviewer: IEEE Pervasive Computing
 - Reviewer: Elsevier Pervasive & Mobile Computing (2x)
 - Reviewer: Elsevier Computers & Electrical Engineering
 - Award Committee: Privacy Enhancing Technology Award
 - Jury Member: Big Brother Awards - Netherlands
- ◇ **Government Service**
- Led ICT Privacy discussion at Dutch Ministry of Justice and Internal Affairs Commissie Veiligheid en Persoonlijke Levenssfeer subcommittee meeting, June 2008.
 - Dutch Parliamentary ‘Tweede Kamer’ Round Table (Commissie LNV) “Attack Plan OV Chipkaart”, March 2008.
 - Founding Member: OV Chipkaart Scientific Forum, March 2008.
 - Expert Testimony: Dutch parliamentary Tweede Kamer hearing (OV Chipkaart Security), Jan 2008.
 - Advisory Group (RFID Security): Dutch Ministry of Transport and Public Works (Verkeer en Waterstaat) - Jan/Feb 2008
 - Led RFID security/privacy roundtable discussion at NIST, December 2006.
 - Submitted a contactless security/privacy evaluation of the NIST 800-96 draft standard, upon invitation of US Dept. of Commerce, June 2006.
 - Invited participant for RFID security/privacy debate, ‘RFID: Kansen en Risico’s van de nieuwe technologierevolutie’, at the Dutch ‘Tweede Kamer der Staten-Generaal’ (House of Representatives of the States General) Technology Committee meeting, April 2006

◇ **Other Service**

- Board member: Netherlands Unix User Group (2006-2009)
- Co-founder: Netherlands Girl Geek Dinner

TEACHING
EXPERIENCE

◇ **Teaching**

- Operating Systems (Feb 2008 – Present)
- Computer Security (Nov 2009, Ghana)
- Pervasive Computing (Designed New Course)

◇ **Teaching Assistant**

- Computer Networks (Oct 2003 – June 2006)
- Programming Languages (Apr 2004 – Sept 2005)