

Curriculum Vitae

Antti Hakkala

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Personal Details

Surname, given names: **Hakkala, Antti Jaakko Aleks**
Date of Birth: 27.07.1981
Place of Birth: Parainen, Finland
Nationality: Finnish
ORCID ID: 0000-0002-0932-7814



Education

Doctor of Science in Technology – Tekniikan tohtori (November 23, 2017)

University of Turku, Faculty of Mathematics and Natural Sciences.

Field: Communication systems

Title of thesis: *On Security and Privacy for Networked Information Society – Observations and Solutions for Security Engineering and Trust Building in Advanced Societal Processes*

Master of Science in Technology – Diplomi-insinööri (October 28, 2009)

University of Turku, Faculty of Mathematics and Natural Sciences.

Field: Electronics Productization (major), Software Engineering, Cryptography (minors).

Title of thesis: *Analysis of an Iris Recognition System Based on Partial Iris Patterns*

Awards: Stipend for meritorious Master's degree in the field of Computer Science (VSTKY ry)

Bachelor of Science in Technology – Tekniikan kandidaatti (June 18, 2009)

University of Turku, Faculty of Mathematics and Natural Sciences.

Field: Microelectronics

Title of thesis (in Finnish, English translation in parenthesis): *Biometrisen tunnistamisen järjestelmiä ja menetelmiä (Methods and Systems for Biometric Identification)*

Language proficiency

Finnish: Native

Swedish: Limited working proficiency

English: Excellent

German: Elementary proficiency

Current employment

University teacher, Cyber security engineering

Department of Computing, University of Turku. 1.1.2021 –

Stage: II

Previous positions

University teacher, Communication systems

Department of Future Technologies, University of Turku. 1.1.2018 – 31.12.2020.

Doctoral candidate, Communication systems

University of Turku, Department of Information Technology 1.11.2009 – 31.12.2016.

University of Turku, Department of Future Technologies 1.1.2017 – 31.12.2017.

Research Assistant, Communication systems

University of Turku, Department of Information Technology. 1.5.2009 – 31.10.2009.

Student Councillor

University of Turku, Department of Information Technology.

1.1.2007 – 31.5.2007 and 15.8.2007 – 30.4.2009.

Trainee

Various companies (TietoEnator, Nokia, TeliaSonera, Raisio yhtymä, Powerfinn), 2002–2008.

Research output

Total number of publications: 29

My 10 most significant publications in the field of cyber security are listed below:

1. Hakkala, Antti and Koskinen, Jani. Personal data protection in the age of mass surveillance. Accepted for publication in *Journal of Computer Security*, 2022.
2. Lindroos, Saku and Hakkala, Antti and Virtanen, Seppo. A systematic methodology for continuous WLAN abundance and security analysis. *Computer networks*, vol 197, 2021.
3. Hakkala, Antti and Isoaho, Jouni and Virtanen, Seppo. Towards Adaptive Cryptography and Security with Software Defined Platforms. In *Computing Platforms for Software-Defined Radio*, Springer International Publishing Switzerland, 2017.
4. Hakkala, Antti and Heimo, Olli I. and Hyrynsalmi, Sami and Kimppa, Kai K. Security, Privacy); DROP TABLE users; – and Forced Trust in the Information Age? *ACM SIGCAS Computers & Society*, Volume 47 Issue 4, pp. 68-80, July 2018.
5. Thanigaivelan, Nanda Kumar and Nigussie, Ethiopia and Hakkala, Antti and Virtanen, Seppo and Isoaho, Jouni. CoDRA: Context-based dynamically reconfigurable access control system for Android. *Journal of Network and Computer Applications*, 101, 1-17, 2018.
6. Hakkala, Antti and Heimo, Olli I. Automobile Automation and Lifecycle – How Digitalisation and Security Issues Affect the Car as a Product and Service? In *proceedings of IntelliSys2019 conference*, London, United Kingdom, 5.-6.9.2019.
7. Hakkala, Antti and Virtanen, Seppo. Refining MSc Theses in Engineering Disciplines with a Focus Enhancing Structure Model. In *proceedings of CDIO2019 conference*, Aarhus, Denmark, 25.-27.6.2019.
8. Heimo, Olli I.; Hakkala, Antti; Kimppa, Kai K. *How to abuse biometric recognition systems*. Journal of Information, Communication & Ethics in Society, Vol. 10 Iss: 2 pp. 68 – 81, 2012.
9. Nigussie, Ethiopia; Hakkala, Antti; Virtanen, Seppo; Isoaho, Jouni. Energy-aware Adaptive Security Management for Wireless Sensor Networks. In *IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks*, Sydney, Australia, July 2014.
10. Hakkala, Antti; Isoaho, Jouni. Defining and Measuring Key Expertise Areas in Information Security for Higher Education Students. In *Proceedings of International Conference on Engineering Education ICEE 2015*, Zagreb, Croatia, 20.-24.7.2015.

Most significant artistic works and processes: See https://www.metal-archives.com/artists/Antti_Hakkala/34503 for details

Research supervision and leadership experience

Number of supervised theses (as of 27.1.2022): 122

- B.Sc. theses: 49
- M.Sc. theses: 73

Active supervision duties (as of 27.1.2022):

- Several B.Sc. and M.Sc. theses (~10)
- Co-supervisor for two D.Sc.(Tech) theses

Teaching merits

My teaching experience spans university courses ranging from basic to advanced studies. I have been the primary lecturer or instructor for 5 courses and course assistant, guest lecturer or lab supervisor for 9 courses. I have completed 3 ECTS of pedagogical studies and aim to complete the necessary studies for university teachers as soon as possible. My comprehensive teaching history is listed below.

All courses are at University of Turku, Finland, unless specified otherwise

1. *System and application security* (DTEK8025), Guest lecturer 2010—2019, Responsible teacher 2020—
2. *Firewall and IPS Technology* (DTEK8063), Laboratory supervisor 2010, Responsible teacher 2011—
3. *Tiedonsiirron perusteet* (DTEK1039), Course assistant 2016, Responsible teacher 2017—2020
4. *Opiskelun ja työelämän tietotekniikka – Tieto- ja kyberturvallisuus* (DTEK1068), Responsible teacher 2017—
5. *Digitaalinen signaalinkäsittely* (DTEK0033), Responsible teacher 2021
6. *Digitalisaatio sote-palveluissa* (DTEK8109), Lecturer 2019 –
7. *Tietotekniikan laboratorioprojekti* (DTEK1061), Lab instructor 2013—2016, Responsible instructor, communication systems and security lab 2017—2018
8. *Tietoyhteiskunta ja kyberturvallisuus* (DTEK1064), Guest lecturer 2014—2015, Course assistant 2014—2019
9. *Digitalisaatio ja kyberturvallisuus* (DTEK0061), Guest lecturer 2020 –
10. *Security Engineering* (DTEK0039), Guest lecturer 2018 –
11. *Tietotekniikka ja yhteiskunta* (DTEK1060), Guest lecturer 2013
12. *Project on information security* (DTEK8027), Laboratory supervisor 2009
13. *ICT Infrastructure* (TJ092205 TJ15, Turku School of Economics), Guest lecturer 2014—2016
14. *Elektroniikka ja digitaalitekniikka* (MERIJOJÄ2G, Finnish Naval Academy), Guest lecturer 2017

Awards and honours

Award for meritorious Master's degree in the field of Computer Science (VSTKY ry) – 2009

Other key academic merits

I have acted as a referee for the following international scientific journals:

- Journal of Supercomputing (2013—2015)
- International Journal of Embedded and Real-Time Communication Systems (2013—)
- Journal of Computer Security (2021—)

I have been a member of the (Technical) Program Committee for the following international conferences:

- International Conference on Engineering Education (2012)
- International Conference on Communication Theory, Reliability, and Quality of Service (2012—2016)
- IFIP Summer School on Privacy and Identity Management (2018,2019)
- CEPE (sub-reviewer, 2019)
- ICT4DA 2019
- Tethics 2021

Scientific and societal impact

Teaching material for wireless local area network security that I have personally authored has been used—in addition to an advanced level course at UTU—by the National Defence Training Association of Finland (MPK ry) in their cyber security education in 2017.

I have been guest lecturer on information security for Digitalization studies in teacher specialization education (*Opettajien erikoistumiskoulutus - Digiympäristöt*) arranged annually by the Faculty of Education, University of Turku, starting from 2016.

I have been interviewed by Finnish National Broadcaster YLE on data breaches (*Tekniikan käsikirja: Radio tekee tietomurron*. Aired 21.11.2011, YLE Radio 1).

I have been invited to give a talk titled *Biometriset tunnisteet autentikointi- ja valvontajärjestelmissä* (biometric identifiers in authentication- and surveillance systems) in the Information Security Day event arranged by Turku University of Applied Sciences, 8.2.2011.

I have been a member of the following preparatory selection committees (year in parenthesis) for fulfilling tenure track professor positions at the Department of Information Technology, University of Turku: Machine learning (2014), Language technology (2014), Interaction design (2014), Embedded Electronics and IoT (2015), Software engineering and Software security (2016), Data science (2018).