

CURRICULUM VITAE

Prof. Mika Erik Ylianttila, University of Oulu, Finland

1. Personal details and the date of the CV

Surname: Ylianttila

Given names: Mika Erik

Gender: male

Year of birth: 1972

Nationality: Finland

Website: <https://www.oulu.fi/university/researcher/mika-ylianttila>

ORCID: <http://orcid.org/0000-0002-8079-5514>

Date of the CV: 1.10.2022



2. Degrees

Degrees

- 9.6.2014, Executive Master of Business Administration (eMBA), University of Oulu, Oulu Business School. Major subject: Strategic Management.
- 23.5.2005, Doctor of Science in Technology (Dr. Sc. Tech), University of Oulu, Technical Faculty. Major subject: Telecommunications.
- 8.10.2001, Licentiate in Technology (Lic. Tech), University of Oulu, Technical Faculty. Major subject: Telecommunications.
- 15.10.1998, Master of Science, degree of Diploma Engineer (MSEE) at the University of Oulu. Major subject: Telecommunications.

Docentship

- 1.6.2007, “Computer Science, especially Information Network Systems”, Docent (Adjunct professor), Department of Electrical and Information Engineering (currently Department of Computer Science and Engineering), University of Oulu.

3. Other education and expertise

Pedagogical training

- Pedagogical Expertise Studies 9 ECTS 26.1.2007
- Basic studies in Educational Science, Approbatur studies 25 ECTS 11.10.2006

4. Language skills

- First language/mother tongue: Finnish
- Other languages: English (fluent, own assessment of proficiency), Swedish (rudimentary)

5. Current employment

- Professor, full tenured professor (1.10.2022-), Centre for Wireless Communications, University of Oulu. Scientific discipline: Security in Wireless Networks.

6. Previous work experience

- Associate Professor (tenure track), full-time tenure track associate professor (1.10.2018-30.9.2022), Centre for Wireless Communications, University of Oulu. Scientific discipline: Security in Wireless Networks.
- Professor, Centre for Wireless Communications, University of Oulu (part-time 1.1.2013-31.12.2015, full-time 1.1.2016-30.9.2018). Scientific discipline: Broadband Communications Networks and Systems, especially Wireless Internet technologies.
- Director, Center for Internet Excellence, research and innovation unit, University of Oulu (1.2.2012-31.12.2015)
- University researcher, Department of Electrical and Information Engineering, University of Oulu, Finland. (50% funding from pro tem professorship) (1.1.2010 – 17.12.2011)
- Professor (pro tem), Department of Electrical and Information Engineering, University of Oulu (full-time 1.9.2005-31.12.2009, half-time 1.1.2010 – 17.12.2011). Scientific discipline: Computer Science, especially Information Networks.
- Project manager, researcher 2002-2005, University of Oulu, MediaTeam Oulu research group
- Project manager, researcher (licentiate thesis) 1998-2001, University of Oulu, Centre for Wireless Communications

- Research assistant and masters thesis student 1997-1998, University of Oulu, Centre for Wireless Communications

7. Research funding and grants

- Principal investigator in more than 30 projects where combined budgets to University of Oulu team have been more than 12 MEUR (direct external funding to University of Oulu is about 70% from that, more than 8 MEUR).
- Significant research funding acquired as the principal investigator:

Communications Engineering

- 5GEAR: 5G Edge Computing Enhanced Augmented Reality (Academy of Finland, ICT 2023: Beyond 5G systems) 2019-2021
- MEC-AI: Edge computing enhanced by artificial intelligence, 2018-2020 (Technology Industries of Finland Centennial Foundation and the Jane and Aatos Erkko Foundation) Role: PI of CWC team research
- SECUREConnect: Secure Connectivity of Future Cyber-Physical Systems (Academy of Finland) 2017-2020
- WIFIUS: MASSIVE-IOT: Scalable Edge Architecture for Massive Location-Aware Heterogeneous IoT Systems, WIFIUS project (Academy of Finland/NSF) 2017-2019
- Industrial Edge: Adaptive, Efficient and Reliable Edge Computing for Industrial Applications (Academy of Finland, ICT2023: Industrial Internet) 2018-2020

Computer Science and Engineering

- Towards Digital Paradise (TDP) (TEKES) 2015-2018
- Naked Approach (NAP): Nordic perspective to gadget-free hyperconnected environments (TEKES) 2015-2018
- CONVINCe (Consumption Optimization in Video Networks), (ITEA2/EUREKA/TEKES)
- ACDC (Adaptive Content Delivery Cluster) (ITEA2/EUREKA/TEKES) 2010-2012
- Future Internet, Next Media (Tivit SHOK/TEKES) 2011-2012
- DECIKOM (Decentralized Inter-Service Communications) (TEKES) 2007-2010
- CAM4Home (Collaborative Aggregated Multimedia for Home) (ITEA2/EUREKA/TEKES) 2007-2010
- ExpeShare (Experience Sharing in Mobile Peer Communities) (ITEA2/EUREKA/TEKES) 2007-2009

- Study grants: Nokia Scholarship (1998), Sonera Foundation (2000), Tauno Tönning Foundation (2000, 2001, 2005), Seppo Säynäjäkangas foundation (2000, 2003), HPY/Elisa foundation (2001)

8. Research output

- Total number of publications: 221 (Scopus)
 - Articles in international peer-reviewed journals (64)
 - Articles in international peer-reviewed conference proceedings (150)
 - Articles in national peer-reviewed conference proceedings (5)
 - Chapters in books or edited volumes (21)
 - National professional magazine articles (3)
 - White papers (2)

Citations:

- Google Scholar h-index 47, <https://scholar.google.com/citations?user=IuRI0cwAAAAJ>
- Scopus h-index 34, <https://www.scopus.com/authid/detail.uri?authorId=15836134300>

9. Research supervision and leadership experience

- Research group leader of Network Security, Trust and Privacy (NetSEC) at the Centre for Wireless Communications (<https://www oulu fi/en/research-groups/network-security-trust-and-privacy>). I started to lead this group first time 2013 as part-time professor (part-time 1.1.2013-31.12.2015) then full-time from 1.1.2016 at the Centre for Wireless Communications. Before that, I lead a research team at MediaTeam Oulu research group 2005-2001, and I was the director of Center for Internet Excellence research and innovation unit 2012-2015. I have been a principal investigator of University of Oulu research work in more than 30 projects.

- *Supervision of Doctoral Theses (16)*. I have supervised to this date 16 doctoral theses, from which 14 as principal supervisor. From these, 10 are in the field of communications engineering (all of them as principal supervisor) since I started leading a group 2013 at the Centre for Wireless Communications.

Communications Engineering (10)

- (2014) Suneth Namal Karunarathna, “Enhanced communication security and mobility management in small-cell networks”, <http://jultika.oulu.fi/Record/isbn978-952-62-0637-0> defended 19.12.2014 (co-supervisor Andrei Gurto)
- (2015) Esa Piri (VTT), “Improving heterogeneous wireless networking with cross-layer information services”, <http://jultika.oulu.fi/Record/isbn978-952-62-0821-3> defended 13.5.2015 (co-supervisor Andrei Gurto)
- (2016) Erkki Harjula, “Energy-efficient peer-to-peer networking for constrained-capacity mobile environments.”, <http://jultika.oulu.fi/Record/isbn978-952-62-1249-4> defended 16.6.2016 (co-supervisor Timo Ojala)
- (2016) Madhusanka Liyanage, “Enhancing Security and Scalability of Virtual Private LAN Services”, <http://jultika.oulu.fi/Record/isbn978-952-62-1376-7> defended 1.12.2016 (co-supervisor Andrei Gurto)
- (2017) Markus Luoto (VTT), “Managing control information in autonomic wireless networking”, <http://jultika.oulu.fi/Record/isbn978-952-62-1645-4>, defended 12.10.2017
- (2018) Ijaz Ahmad, “Improving software defined cognitive and secure networking”, <http://jultika.oulu.fi/Record/isbn978-952-62-1951-6>, defended 20.6.2018 (co-supervisor Andrei Gurto)
- (2018) Pawani Porambage, “Lightweight Authentication and Key management of Wireless Sensor Networks for Internet of Things”, <http://jultika.oulu.fi/Record/isbn978-952-62-1995-0>, defended 26.9.2018 (co-supervisor Andrei Gurto)
- (2019) Tenager Mekonnen, “Efficient resource management in Multimedia Internet of Things”, <http://jultika.oulu.fi/Record/isbn978-952-62-2186-1>, defended 14.3.2019 (co-supervisors Erkki Harjula and Timo Koskela)
- (2020) Tanesh Kumar, “Secure edge services for future smart environments”, <http://jultika.oulu.fi/Record/isbn978-952-62-2798-6>, defended 16.12.2020 (co-supervisor Erkki Harjula)
- (2021) Jude Okwuibe, “Software-defined resource management for industrial internet of things”, <http://jultika.oulu.fi/Record/isbn978-952-62-3161-7>, defended 14.12.2021 (co-supervisors Erkki Harjula and Ijaz Ahmad)

Computer Science and Engineering (6)

- (2010) Zhonghong Ou, “Structured peer-to-peer networks: Hierarchical architecture and performance evaluation”, <http://jultika.oulu.fi/Record/isbn978-951-42-6248-7>, defended 26.8.2010
- (2011) Otso Kassinen, “Efficient middleware and resource management in mobile peer-to-peer systems,” <http://jultika.oulu.fi/Record/isbn978-951-42-9573-7>, defended 18.11.2011
- (2011) Timo Koskela, “Community-centric mobile peer-to-peer services: performance evaluation and user studies”, <http://jultika.oulu.fi/Record/isbn978-951-42-9600-0>, defended 23.11.2011
- (2011) Jiehan Zhou, “Pervasive Service Computing: Community Coordinated Multimedia, Context Awareness, and Service Composition”, <http://jultika.oulu.fi/Record/isbn978-951-42-9645-1>, defended 2.12.2011 (co-supervisor, main supervisor Jukka Riekk)
- (2014) Meirong Liu, “Efficient super-peer-based coordinated service provision” <http://jultika.oulu.fi/Record/isbn978-952-62-0400-0>, defended 15.4.2014 (co-supervisor Timo Ojala)
- (2020) Daniel Pakkala, “On design and architecture of person-centric digital service provisioning: approach, fundamental concepts, principles and prototypes”, <http://jultika.oulu.fi/Record/isbn978-952-62-2789-4> 18.12.2020 (co-supervisor, main supervisor Tero Päivärinta, other co-supervisor Mika Mäntylä)

10. Teaching merits

- (Separate teaching merits portfolio)
- *Supervision of M.Sc. Theses (89) as principal supervisor.* I have supervised as principal supervisor altogether 89 master’s thesis works since 2006, which are done either to research or industry. I would estimate that more than half are done to industry. From these, about 20 are done in the field of Communications Engineering, other in Computer Science and Engineering and Information Networks study programmes.
- *Responsible teacher in Communications Engineering:*
 - Communications Networks I (521340S), 5 ECTS (2017-), <https://opas.peppi.oulu.fi/en/course/521340S/716>
 - Communications Networks II (521377S), 7 ECTS (2017-), <https://opas.peppi.oulu.fi/en/course/521377S/3876>

11. Awards and honours

- IEEE Outstanding Leadership Award, as Program Chair of 17th IEEE International conference on Computer and Information Technology (IEEE CIT-2017)
- SIGMONA project (where CWC team lead by me was partner) received the CELTIC Excellence and CELTIC Innovation Awards in 2017 and 2018 (<https://www.celticnext.eu/project-sigmona/>)
- Best paper awards

- Y. Siriwardhana, G. Gur, M. Ylianttila, M. Liyanage, "The Role of 5G for Digital Healthcare against COVID-19 Pandemic: Opportunities and Challenges" in Elsevier ICT Express Journal, pp. 244-252, volume 7, number 2, June 2021 (Impact Factor: 2.950)
- I. Ahmad, T. Kumar, M. Liyanage, J. Okwuike, M. Ylianttila, A. Gurtov, "5G Security: Analysis of Threats and Solutions", the 2017 IEEE Conference on Standards for Communications and Networking (CSCN), Helsinki, Finland, September 2017.
- M. Liyanage, I. Ahmad, M. Ylianttila, J. Llorente Santos, R. Kantola, O. López Pérez, M. Itzazelaia, E. Montes de Oca, A. Valtierra, C. Jimenez, "Security for Future Software Defined Mobile Networks", to appear in Proc. of 9th International Conference on Next Generation Mobile Applications, Services and Technologies (NGMAST,2015), Cambridge, UK. September 2015.
- T. Koskela, N. Kostamo, O.Kassinen, J. Ohtonen, M. Ylianttila, "Towards Context-Aware Mobile Web 2.0 Service Architecture", In Proceedings of the International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies, Papeete, French Polynesia, 2007.

12. Other key academic merits

Reviewer (pre-examiner) of Doctoral Theses (15)

- (2008) Mehdi Mani, Institut Telecom Sud-Paris, France, Reviewer (Rapporteur)
- (2011) Marcin Matuszewski, Aalto university, Business and technical aspects of mobile peer-to-peer social networks
- (2012) Sivasothy Shanmugalingam, Institut Telecom Sud-Paris, France: "Convergence of Web and Communication Services", Reviewer (Rapporteur)
- (2012) Jarno Rajahalme, Aalto University, "Inter- Domain Incentives and Internet Architecture", Reviewer
- (2012) Samu Varjonen, University of Helsinki, "Secure Connectivity With Persistent Identities"
- (2013) Jouni Mäenpää, Aalto University: "Framework Architecture for Decentralized Communications"
- (2015) Imran Khan, Institut Telecom Sud-Paris, France: "Cloud-based Cost-Efficient Application and Service Provisioning in Virtualized Wireless Sensor Networks", (Rapporteur)
- (2015) Yi Ding, University of Helsinki, "Collaborative Traffic Offloading for Mobile Systems"
- (2015) Nuutti Varis, Aalto University, "Distributed Routing Bridges"
- (2015) Leo Bhebhe, Aalto University, "Service Continuity in 3GPP Mobile Networks"
- (2017) Marwan Albahar, University of Eastern Finland, "Bluetooth pairing security: Threats and Countermeasures"
- (2017) Ella Peltonen, University of Helsinki, "Crowdsensed Mobile Data Analytics"
- (2020) Matteo Pozza, University of Helsinki, "Enabling Network Flexibility by Decomposing Network Functions"
- (2020) Mohsin Khan, University of Helsinki, "Privacy of User Identities in Cellular Networks"
- (2022) Seppo Hätönen, University of Helsinki, "Seamless Programmable Multiconnectivity"

Opponent of Doctoral Theses (8)

- (2006) Jani Puttonen, University of Jyväskylä, "Mobility management in wireless networks"
- (2009) Matti Koivisto, Aalto University, "Mobile Information System Adoption and Use – Beliefs and Attitudes in Mobile Context"
- (2012) Khalil Laghari, Institut Telecom Sud-Paris, France, "On Quality of Experience for Multimedia Services in Communication Ecosystem" (Examineur)
- (2015) Son Han, Institut Telecom Sud-Paris, "Semantic Service Provisioning for 6LoWPAN: Powering Internet of Things Applications on Web" (Examineur)
- (2015) Sumanta Saha, Aalto University, "Efficient Methods on Reducing Data Redundancy in the Internet"
- (2017) Bin Xiao, Stockholm University, Sweden, "Data-Centric Network of Things: A Method for Exploiting the Massive Amount of Heterogeneous Data of Internet of Things in Support of Services"
- (2018) Naser Hossein Motlagh, Aalto University, "An efficient System Orchestrator and a Novel Internet of Things Platform for Unmanned Aerial Systems"
- (2021) Arseny Kurnikov, Aalto University, "Trusted Execution Environments in Cloud Computing"

Reviewer of Docentships (4)

- (2013) Pasi Sarolahti, University of Helsinki
- (2015) Matti Siekkinen, University of Helsinki
- (2019) Eemil Lagerspetz, University of Helsinki
- (2020) Andrei Costin, University of Jyväskylä

Responsibilities in international journals and conferences

- Associate editor in IEEE Transactions on Information Forensics and Security 2020 -, co-editor in Wireless Networks (<http://link.springer.com/journal/11276>) 2013-2020
- Reviewer for several journal publications, including: IEEE JSAC; IEEE Transactions on Mobile Computing; IEEE Transactions on Vehicular Technology; IEEE Transactions on Wireless Communications; IEEE Wireless

Communications Magazine; IEEE Communications Magazine; ETRI Journal; Wireless Communications and Mobile Computing (WCMC) Journal; Elsevier Computer Communications; Elsevier Information Sciences, etc.

- Chair and co-chair positions in international scientific conferences, technical program committee (TPC) membership in several international scientific conferences

Other responsibilities and committee positions

- Director of Communications Engineering doctoral program, University of Oulu Graduate School 2018-
- Deputy member to UnioGS doctoral training committee for Information Technology and Electrical Engineering 2017-2018
- Member of the Departmental Study Committee, Department of Electrical and Information Engineering, University of Oulu, 2005–2009
- Responsible professor Information networks study programme 2006-2010
- Member in University of Oulu Ethics committee representative of Faculty of Technology 2000-2004.

Positions of trust

- Director, Communications Engineering Doctoral Degree Programme 2018-
- Member, Doctoral Training Committee for Information Technology and Electrical Engineering 2018-
- Chair of IEEE Finland Section 2008-2009, Vice Chair 2006-2007, member of IEEE R8 committee 2008-2009
- Deputy member of University of Oulu to DIMECC research council (<https://www.dimecc.com/>) 2017-