

# CURRICLIUM VITAE

## 1. Full name and date

Name: Dmitri Moltchanov  
Gender: male  
Date of writing: 20.02.2018

## 2. Date and place of birth, nationality current residence

Date/place of birth: 4 March 1978, St.-Petersburg, Russia  
Nationality: Russian  
Citizenship: Russian  
Current residence: Finland (since 2002)

## 3. Education and degrees awarded

**2002-2006:** Ph.D. in "Computer Networking" (graduated 10.03.2006)

- *institution:* Tampere University of Technology (TUT);
- *major:* computer networking

**2000-2002:** Candidate of Science in "Telecommunications networks" (graduated 25.06.2002)

- *institution:* St.-Petersburg State University of Telecommunications (SUT)
- *major:* computer networking

**1994-2000:** M.Sc. in "Telecommunications networks" (graduated 23.05.2000)

- *institution:* St.-Petersburg State University of Telecommunications
- *major:* computer networking

Docentship in "Performance optimization of networking systems" has been awarded in 2011 and extended in 2016. The expiration date is 2021.

## 4. Other education and training, qualifications and skills

**2015-2017:** Vocational teacher program in education (graduated 10.03.2017)

- *institution:* Tampere University of Applied Science (TAMK)
- *major:* modern educational and learning theories and practical techniques

**Specialized software:** Wolfram Mathematica, Mathcad PTC, IBM SPSS Statistics, SigmaPlot.

**Programming languages:** C/C++/perl (intermediate level)

## 5. Linguistic skills

*English:* fluent;

*Russian:* mother tongue;

*Finnish:* intermediate level.

## 6. Current position

*Position:* senior research scientist (part-time since 2017)

*Employer:* Tampere University of Technology

*Place of work:* Tampere, Finland

*Start-end date of employment:* 01.09.2013-30.06.2018

*Research career phase:* recognized researcher, group leader.

**Brief job description:** research in modern networking technologies (projects supervisions, WP leadership and actual scientific writing), lecturing undergraduate/graduate level courses (3-4 per

year), teaching young lab personnel tools and methods of mathematical network modeling; MSc and PhD theses supervisions (3-4 MSc theses per year).

## 7. Previous work experience

**2008-2013:** Assistant Professor (Yliassistentti), Tampere University of Technology;

**2006-2010:** Academy of Finland postdoc researcher, Tampere University of Technology;

**2004-2006:** PhD student, Tampere University of Technology;

**2000-2002:** Candidate of Science student, St.-Petersburg University of Telecommunications.

**Notes:** no career breaks, no secondary occupations, no conflict of interest, no side commitments.

## 8. Research funding, leadership and supervision

Dmitri is responsible for full cycle of project implementation, including preliminary studies showing feasibility of projects, writing and submitting an application. In his projects the applicant performs a part of the actual work not only supervises the research activities.

Acting as a principal investigator or WP leader:

**2012-2016:** FiDiPro programme, THz track leader, Academy of Finland

**2010-2013:** UBISERVE: Future ubiquitous services and applications, TEKES

**2006-2010:** Cross-layer performance control for wireless channels, Academy of Finland

**2002-2006:** Cross-layer performance evaluation of wireless channels, GETA Grad. School

**2001-2003:** Performance of videotraffic transmission in ATM networks, CIMO foundation

Acting as a researcher/contributor:

**2010-2014:** COST WINEMO: Wireless networking for moving objects

**2006-2010:** COST 290: Traffic and QoS management in wireless multimedia networks

**2000-2004:** COST 263: Quality of future Internet services

**2003-2005:** ICEFIN Research Laboratory

Supervision of doctoral researchers

Margarita Gepeyenko, 2017- "Performance analysis of 5G mmWave access networks"

Vitaly Petrov, 2016- "The last meter terabit-per-second wireless access"

Mikhail Gerasimenko, 2015- "Performance optimization of heterogeneous networks"

Mikhail Komarov, 2015-2017 "Performance analysis of access networks for big data"

Jakub Jakubiak, 2008-2012 "Performance extension and evaluation of VANET systems"

Supervision of MSc students (32 over 9 years, average per year: ~3.6)

Dmitri is involved in a number of industrial collaborations. The ongoing ones are below:

**2014-:** Intel Wireless US

- *theme:* developing algorithms for millimeter wave access networks;
- *contact person:* Dr. Nageen Himayat, principal engineer

**2017-:** Ericsson Research Sweden

- *themes:* V2V/V2I/V2X technologies in mmWave band/NB-IoT and M2M communications;
- *contact person:* Dr. Gabor Fodor, principal investigator

## 9. Merits in teaching and pedagogical competence

*Dmitri has pedagogical education:*

- Vocational teacher program in education, TAMK
- "Pedagogical skills for teachers and teaching practice in higher education" 2017, TAMK

*Involvement in curriculum planning and implementation of courses:*

- involved in MSc degree program planning since 2010
- involved in course planning and implementation since 2004
- developed and taught more than 50 graduate and postgraduate level courses
  - "Wireless networking ", 32 lecturing hours, 6 runs
  - "P2P systems and blockchain technologies", 28 lecturing hours, 6 runs
  - "Millimeter wave and terahertz wireless access networks", 12 lecturing hours, 2 runs
  - "Teletraffic theory, part I: network analysis", 28 lecturing hours, 14 runs
  - "Teletraffic theory, part II: network optimization", 28 lecturing hours, 6 runs
  - "Traffic modeling", 28 lecturing hours, 2 runs
  - "Queuing networks", 24 lecturing hours, 1 run
  - "Advanced queuing models", 24 lecturing hours, 1 run
  - "Network simulation techniques", 28 lecturing hours, 6 runs
  - "Ad hoc networks ", 28 lecturing hours, 5 runs
- "Broadband backbone networking technologies", 24 lecturing hours, 2 runs

*Development of teaching methods:*

- practicing problem-oriented learning
- performing "just blackboard" learning for math-involved courses
- practicing "interactive-room" learning

## 10. Awards, prizes and honors

- 2015: VTC-Fall, Best Paper Award
- 2006: WWIC'2006 Best Paper Award
- 2002: Young Investigator Award by Government of Russian Federation

## 11. Other academic merits

- served as a chair of Broadband Wireless Access (BWA) workshop in 2008-2012;
- member of a technical program committee in a number of conferences, e.g.
  - NEW2AN annual conference, starting from the year 2004
  - WWIC conference, starting from the year 2006
- served as an invited lecturer in other universities
- serving as a reviewer (referee) in IEEE, Elsevier, Springer, and Wiley journals, e.g.
  - IEEE Transactions on Vehicular Technologies
  - IEEE Communications Letters
  - Elsevier Computer Communications

Dmitri is the author of a book Dunaytsev, R., **Moltchanov D.**, "TCP performance modeling in wired and wired/wireless networks: single source models," ISBN 3846504653, 2011, 198 pages, <http://www.amazon.com/Performance-Modeling-Wired-Wireless-Networks/dp/3846504653>.

The applicant is currently working on a book tentatively entitled "Mathematical methods for wireless networks modeling". The book is to be distributed free-of-charge using GNU Creative Commons license. The tables of contents of two chapters are available at:

- Reminder of probability theory: [http://www.cs.tut.fi/~moltchan/book/prob\\_.pdf](http://www.cs.tut.fi/~moltchan/book/prob_.pdf)
- Reminder of statistics: [http://www.cs.tut.fi/~moltchan/book/stat\\_.pdf](http://www.cs.tut.fi/~moltchan/book/stat_.pdf)

## 12. Scientific and societal impact of research

- more than 140 publications (2002-2018: 8.8 per year)
- more than 50 journal publications (2002-2018: 3.4 per year)
- most cites publication: 197 citations

- h-index: 17, i10-index: 32 (as of 20.02.2018)
- merits related to production of teaching results
  - lecture slides are used in other universities
  - parts of the book written by the applicant are provided to students free-of-charge
- implementing a summer volunteer course in theoretical networking
  - aim: preparing MSc students for the thesis work
  - program: <http://www.cs.tut.fi/~moltchan/mscprep.html>
  - 3-5 people in attendance every year

### 13. Referees

Prof. Yevgeni Koucheryavy,  
 Department of Electronics and Communication Engineering,  
 Tampere University of Technology,  
 Postal address: 33720, Korkeakoulunkatu 1, Tampere,  
 Email: [evgeni.kucheryavy@tut.fi](mailto:evgeni.kucheryavy@tut.fi)  
**Relationship:** current supervisor of the applicant.

Prof. Josep Jornet  
 Department of Electrical Engineering  
 University at Buffalo, The State University of New York,  
 Postal address: 222 Davis Hall, Buffalo, NY 14260,  
 Phone number: +1 716 645-1607  
 Email: [jmjornet@buffalo.edu](mailto:jmjornet@buffalo.edu)  
**Relationship:** long-standing collaboration partner on millimeter wave communications track.

Dr. Janne Lehtomaki, Docent  
 Center for Wireless Communications,  
 University of Oulu, Finland,  
 Postal address: P.O.Box 4500, FI-90014,  
 E-mail: [jannel@ee.oulu.fi](mailto:jannel@ee.oulu.fi)  
**Relationship:** long-standing collaboration partner on terahertz wireless communications track