1 Full name and date

Surname:	Välisuo
Given names:	Petri Olavi
Gender:	Male
Marital status:	Married
Children:	2 children
Date of CV:	6th of April 2018

2 Date and place of birth, nationality, current residence

Date of birth:	8th of August 1971
Place of birth:	Karinainen, Finland
Citizenship:	Finnish
Current residence:	Kylätie 12, 65320 Vaasa, Finland
Telephone (mobile):	+358 44 580 4320

3 Education and degrees awarded

3.1 Degrees

- Doctor of Science (technology), University of Vaasa, 16. June 2011
- Master of Science (technology), Tampere University of Technology, March 1996
- Finnish matriculation examination, Elisenvaaran lukio, May, 1990

3.2 Education

- 2006-2011 Doctor of Science (technology) **Thesis** Photonics simulation and modelling of skin for design of Spectrocutometer, grade 3/3.
- 1990-1996 Master of Science (technology), Tampere University of Technology. **major** Digital signal and image processing, **minors** software engineering and applied electronics **Master's Thesis:** *Real time audio development system for digital mobile phone*, grade 5/5.
- 1990: Finnish Matriculation Examination, Elisenvaara upper secondary school

4 Other education, training, qualifications and skills

4.1 Other education

- Learning in networks I, 2012, 5 CU (pedagogics, organized by Tritonia, 2012)
- University pedagogics, 2014, 10 CU (Organized by the Open University of Vaasa and Eduta Ltd, completed in the end of April 2014)

4.2 Other skills

- Wind power and environmental acoustics
- Data analysis, machine learning, multivariate statistics, big data, using Python, R, Octave and MATLAB in computer clusters.
- Simulation modelling and optimisation: Stochastical models, deterministic numerical models and PDE–models
- Renewable energies, geo–energy and distributed power generation
- Telecommunication protocols, IEC61850, IoT, building automation
- Research project planning and management
- Digital signal processing and processor architectures
- Medical imaging, hyperspectral imaging and image processing
- Agile research and software development processes, Scrum, XP and FDD, etc.
- Pogramming languages and software: Python (17 years), MATLAB and Octave (27 years) R (5 years), PHP, JavaScript, SQL, VHDL, C/C++, Perl, Java, Basic, Pascal, Assembly languages.

5 Linguistic skills

5.1 Mother tongue

Finnish

5.2 Other languages

	Understanding		**Speaking**		**Writing**
	Listening	*Reading*	*Spoken*	*Spoken*	
English	Proficient user, C1	Proficient user, C1	Proficient user, C1	Proficient user, C1	Proficient user, C1
Swedish	Independent user, B1	Independent user, B1	Independent user, B1	Independent user, B1	Independent user, B1

6 Current position

Assistant professor, Renewable energies group, University of Vaasa, since 1st of August 2018. Planning, applying and managing research projects and performing research work.

7 Previous work experience

- *Leader of the VEBIC research group*, 1st of March 2018 – 31th of August 2018. Responsibility to lead the research work of the research group.
- *Assistant professor*, University of Vaasa, since 1st of August 2011 – 28th of february 2018. Responsibilities include developing wind energy research area within the University, project planning, management and research activities. A large part of the work is to create networks, plan new researc proposals and to apply funding with national and international research consortiums. Teaching responsibilities. Research level 3: Established and independent researcher.
- *University of Vaasa*, Researcher, post graduate student, 1st of August 2009 – 31th of July 2011
- *Researcher*, Grant of Finnish Cultural Foundation, South Ohstrobothnia Regional Fund 1st October 2008 – August 2009.
- *University of Vaasa*, Faculty of Technology, Automation technology, researcher and laboratory engineer 1st of April 2007 – 30th of September 2008
- *University of Vaasa*, Faculty of Technology, Automation technology, lecturer 1th of January 2006 – 31st of March 2007.
- *WasaLab*, Founder, with 5 colleagues. Product development, sales, teaching and support tasks. April 2002 – December 2005.
- *Oy LM Ericsson Ab*,
  - Main architect (SW), April 2001 – March 2002
  - Research manager, Mobile Internet August 1999 – 31. March 2001
- *University of Vaasa*, Lecturer, Electrical engineering, August 1997 – July 1999.
- *Nokia Mobile Phones*, Tampere, DSP-designer. Design, implementation, integration and testing of audio signal processing systems in mobile phone. May 1995 – July 1997.
- *Tamfelt Oy*, Tampere, IT trainee. May – August 1993 and May – August 1994.

8 Research funding, leadership, supervision

8.1 Aquired research funding and leadership

I have managed to acquire more than 1 M€:s worth of research funding to the University of Vaasa, and build a research infrastructure worth of 50 000 €:s for the research of wind power and environmental acoustics. All the work, except teaching, has been funded by external sources.

1. NoICE project, 2018-2021, funded by Bothnia–Atlantica program, our budget over 200 k€ and total budget 1.9 M€. Partners Novia, Tampere University of Technology, University of Umeå, Luleå Technical University.

2. Wind Center of Expertise (WindCoE) is a project, funded by Bothnia–Atlantica program. I wrote our part in the project plan, and I am working in it. The share of University of Vaasa of the budget is 53 000 € and the total budget is 1.4 M€. Other members are: Novia, University of Tromsø, Tampere University of Technology, University of Umeå and Luleå University of Technology.

3. Wind turbine sound modelling and measurement project (WindSoMe). Research partners: Finnish State Technical Research Center (VTT), Finnish Work Safety Institute (TTL), Swedish University of Applied Sciences in Vaasa (NOVIA). Funded by TEKES from European Regional Development Funds (ERDF). I initiated the project and was the main author of the project plan and I am the project manager. The budget for the project was 685 000 € and the share for University of Vaasa was 255 000 € . The project is now ended, and the final report, intended to Finnish experts and the public is under publication process.

4. eDEMVE, a project for improving the IEC 61850 PAC laboratory. I wrote the most of the project plan and found funding from industry. I was working as a project manager in the project. Total budget was 190 000 €. Members: UVA, VAMK and Novia. Funding from Ostrobothnian foundation.

5. Wind power noise effects (TuMeVa) in 2014. I participated in the project. Our share was approximately one man month. Funding from the Ministry of Environment.

6. EU Botnia-Atlantica funding for NOSEG[1] project, 600 000 €. Made connections to University of Umeå in Sweden, University of Tromsøin Norway, Tampere University of Technology in Finland. Wrote the main part of the project plan and act as a primary investigator and as a project manager. The purpose of the project was to form a research group which can cover widely different technological areas of wind power research, including wind resource assessment, fluid dynamics, grid connection, electrical protection and landscape impacts.

7. TEKES[2] ERDF[3] funding for RE Form project, 1.3.2012 - 31.12.2013, Wind power and Geo-energy research, 400 000 €. Wrote 50% of the application, found the industrial partners and have acted as the primary investigator and project manager.

8. Post-graduate school position, University of Vaasa, 1.8.2009 - 31.7.2011, personal research grant for postgraduate studies.

9. Research grant, Finnish Cultural Foundation, 1.10.2008 - 31.7.2009, personal research grant for post-graduate studies.

[1] Nordic Smart Energy Research Group
[2] Finnish technology research funding agency
[3] European Union Regional Development Funding

10. TEKES[1] funding for research networked with industry. Planned the project and acted as a primary investigator. The involved company submitted the application.

9 Merits in teaching and pedagogial competence

9.1 Teaching experience

9.1.1 Full time teaching positions

- Lecturer, electrical engineering in University of Vaasa, 1st August 1997 - 31st July 1999
- Lecturer, automation technology in University of Vaasa, 1st January 2006 - 31st Marc h 2007

Since year 2007, I have worked as a project researcher, post graduate student, and assistant professor positions in the University of Vaasa. During this time, my main responsibility has been to make research, and teaching and supervision tasks have had smaller role.

9.2 Supervison

Currently appointed as a secondary supervisor of a postgraduate student. I have been a instructor of a Licentiate thesis and I have been a supervisor or instructor of 12 master of science theses and two bachelor of science theses.

9.3 Courses

1. System on a Chip (FPGA) course, excercises, spring 2018
2. Physics laboratories, fall 2015 and spring 2016
3. Physics I: Static electric fields, fall 2013
4. Physics 2: Optics, spring 2014
5. Essence of physics: spring 2013
6. Advanced digital circuits, spring 2007, spring 2005
7. Digital signal processors, spring 2007
8. Computer science in automation, spring 2006
9. Digital signal processing, spring 2006
10. Automation systems, spring 2006
11. Extreme programming and Unified Modelling Language (UML), fall 2003
12. Physics: Mechanics and static electric fields, 2003

13. Circuit analysis, 1998 and 1999
14. Static electric field theory, 1998 and 1999
15. Dynamic electric field theory, 1999
16. Digital signal processing, fall 1998 and fall 1999 (VAMK)

I have prepared the course material usually myself. I often share my material according to the Free Documentation Licence (FDL), so that the others can re–use and improve my material. I believe that sharing would makes teaching more efficient. I prepare online course material which can be easily accessed and which can be also easily printed. I try to visualize theories with figures and program code whenever I have enough time for it to support different learners.

9.4 Pedagocial competence

- Learning in networks I, 5 cu.
- Learning in newtorks II, 5 cu, currently ongoing
- University pedagogics, 10 cu in semester 2013-2014.

10 Other academic merits

- Reviewer academic journal including articles published in IEEE transactions on biomedical imaging and Journal of Biomedical optics.

10.1 Scientific and societal impact of research

- Total number of refereed scientific publications: 17.
- Scopus h-index: 5
- Google Scholar: h-index 7, i-10 index 6.
- JUFO class II publication:

  and J. Alander. New closed-form approximation for skin chromophore mapping. *Journal of biomedical optics*, 16(4):046012, Apr. 2011. PMID: 21529081.

- Several other frequently cited publications: The first one mainly authored alone, for the second and the third article responsible of the measurement technology and for the fourth article authored the measurement technology part.

  J. T. Alander, and H. O. Kuokkanen. Objective scar assessment—A new method using standardized digital imaging and spectral modelling. *Burns*, 37(1):74–81, Feb. 2011.

J. T. Alander, and H. O. Kuokkanen. How to assess scar hypertrophy—a comparison of subjective scales and spectrocutometry: A new objective method. *Wound Repair and Regeneration*, 19(3):316–323, 2011.

T. Pätilä, T. Spillmann, V. V. Tuchin, M. Venermo, and P. Välisuo. A review of indocyanine green fluorescent imaging in surgery. *International Journal of Biomedical Imaging*, 2012:1–26, 2012.

- Conference papers have been written from the new research area. We have already measurement data which allows several journal articles to be published based on these conference papers:

  wind turbine noise analysis by machine learning. In *INTER-NOISE Conference Proceedings*, Hong Kong, Aug. 2017. Institute of Noise Control Engineering.

  Effect of wind speed and wind direction on amplitude modulation of wind turbine noise. In *INTER-NOISE Conference Proceedings*, Hong Kong, Aug. 2017. Institute of Noise Control Engineering.

- One patent:

  L. Barna, and J. Mäkiranta. Method and device for capacitive detection of objects, Jan. 2009.

- Participation in public discussion on wind energy: Member of the public wind energy discussion group with mixed participants from governmental offices, research units and citizen representatives. Few newspaper articles and radio and TV publicity. Organization of the wind turbine noise seminar for experts and citizens in 2016.

11 Positions of trust

For profession:

- Vice chair of the steering group of the Regional wind power technician education project (Suupohjan tuulivoima–asentajakoulutus), during 2013 - 2014.
- Working three years in the organization committee of the Renewable and Efficient Energy Conference (REE) organized yearly during Vaasa energy weeks.

For hobbies:

- Rolling Dance Sports Club, Secretary of the board

Updated: 6th of April 2018