

Curriculum Vitae

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Full Names

Ari Juhani Korhonen

Contact information

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Education and degrees awarded

Doctor of Science in Technology, Helsinki University of Technology (in Computer Science), 2003

Licentiate of Science in Technology, Helsinki University of Technology (in Computer Science), 2000

Master of Science in Technology, Helsinki University of Technology (in Computer Science), 1997

Languages: Finnish (native), English (fluent), Swedish (satisfactory)

Current positions

1. **Senior University Lecturer, Department of Computer Science, Aalto University School of Science, 2011–**
2. Adjunct Professor, Faculty of Mathematics and Natural Science, University of Turku, 2012–
3. Co-Founder (2008), Chair of the Board, By The Mark CO (www.bythemark.com), 2010–

Previous professional appointments

- Visiting Scholar, Graduate School of Education, Stanford University, 2013-2014 (8 mo)
- Researcher, Department of Computer Science and Engineering, Faculty of Information and Natural Sciences, Aalto University School of Science and Engineering, 2010 (12 mo)
- Adjunct Professor in Software Visualization, Helsinki University of Technology, 2006–2011
- Acting professor, Helsinki University of Technology, 2002 (12 mo)
- Lecturing Researcher, Department of Computer Science and Engineering, Helsinki University of Technology (2000–2009)
- Researcher, Helsinki University of Technology, 1998–2000
- Teaching Assistant, Helsinki University of Technology, 1996–1997

Thesis supervised/instructed, and/or reviewed

Theses	D.Sc.	Lic.Sc.	M.Sc.	B.Sc.	Total
Supervised/instructed	8	3	24	24	59
Pre-examiner / opposer	4	2	4	0	10
Total	12	5	27	19	69

List of instructed D.Sc. (Tech) thesis

1. **Tapio Auvinen:** Educational Technologies for Self-Regulated Learning in Online Learning Environments, 2015, D.Sc. (Tech)
2. **Lasse Hakulinen:** Gameful Approaches for Computer Science Education: From Gamification to Alternate Reality Games, D.Sc. (Tech), 2015
3. **Juha Helminen:** Supporting Acquisition of Programming Skills in Introductory Programming Education Environments for Practicing Programming and Recording and Analysis of Exercise Sessions, D.Sc. (Tech), 2014
4. **Ahmad Taherkhani:** Automatic Algorithm Recognition Based on Programming Schemas and Beacons: A Supervised Machine Learning Classification Approach, D.Sc. (Tech), 2013

5. **Otto Seppälä:** Advances in Assessment of Programming Skills, D.Sc. (Tech) thesis, 2012
6. **Petri Ihantola:** Automated Assessment of Programming Assignments — Visual Feedback, Assignment Mobility, and Assessment of Students' Testing Skills, D.Sc. (Tech) thesis, 2011
7. **Mikko-Jussi Laakso:** Promoting Programming Learning, D.Sc. (Tech) thesis, 2010
8. **Ville Karavirta:** Facilitating Algorithm Visualization Creation and Adoption in Education, D.Sc. (Tech) thesis, 2009

In addition, I have been in very close collaboration with **Lassi Haaranen**, **Niko Myller** and **Jussi Nikander** while they were conducting research reported on their dissertations. However, I was appointed neither their official supervisor nor instructor (missing from the table). Myller got his PhD from University of Joensuu, Finland in 2009. Haaranen, and Nikander got their PhD from Aalto University in 2019, and 2012, respectively.

List of pre-examined / opposed theses

1. **Matthew Heinsen Egan:** *Advanced debugging and program visualization for novice C programmes*, The University of Western Australia, PhD thesis, December 2015
2. **Arto Vihavainen:** A Sustainable Framework for Introductory Programming Education and Research, PhD thesis, unpublished manuscript, June 2015
3. **Tuukka Ahoniemi:** *Efficient Use of Teaching Technologies with Programming Education*, Tampere University of Technology, D.Sc. (Tech) thesis, May 2015
4. **Sanna Heikkinen:** *Challenges and Motivational Aspects to Gain 55 ECTS per Year*, Aalto University, Licentiate thesis, Department of Micro and Nanosciences, August 2014
5. **Anne-Kathrin Peters:** *The Role of Students' Identity Development in Higher Education in Computing*, Licentiate theses (ISSN 1404-5117), Uppsala University, Department of Information Technology, April 2014
6. **Francisco Almeida Martínez:** *Generation of Educational Visualizations of the Syntax Analysis*, Rey Juan Carlos University, Laboratory of Information Technologies in Education, European PhD thesis, January 2011
7. **Bofei Guo:** *Automated Recognition of Algorithms from Source Code*, Helsinki University of Technology, Master's thesis, May 2009
8. **Juha Litola:** *Internet-hakukoneiden hakutulosten visualisointi*, diplomityö, kesäkuu 2005
9. **Leena Salmela:** *Automaattiset kääntäjänlaatumistehtävät*, diplomityö, maaliskuu 2005
10. **Panu Silvasti:** Tilastollisen datan kerääminen algoritmista kotitehtäväsovelmista, diplomityö, syyskuu 2003

List of supervised M.Sc. thesis

1. **Tilanterä, Artturi:** Towards Automatic Advice in Visual Algorithm Simulation, M.Sc. Thesis, 2020
2. **Jokitulppo, Matti:** Real-time sentiment analysis of video calls, M.Sc. Thesis, 2019
3. **Mikko Aula:** Modular application framework for integrating business processes to Microsoft Outlook, M.Sc. Thesis, May 2010
4. **Sakari Lampinen:** Detecting roles of variables in an intermediate language, M.Sc. Thesis, June 2010
5. **Tapio Auvinen:** Rubyric - A rubrics-based online assessment tool for effortless authoring of personalized feedback, M.Sc. Thesis, March 2009
6. **Ari A. Pajunen:** Sovelluskehys yhdyskäytäväsovellusten rakentamiseen pakettikytkentäisissä moniprotokollatietoverkoissa, diplomityö, 2002
7. **Eero Jyske:** UMTS signalling on Symbian platform, M.Sc. Thesis, 2002

List of instructed B.Sc., M.Sc. & Lic.Sc. thesis after 2000-2016

1. **Lehmus, Olli-Samuli:** Hakurakenteiden toteutukset Scala-, Python- ja C++ -kielten standardikirjastoissa, kandidaatintyö, 2021
2. **Karttunen, Kerkko:** Avoimen lähdekoodin tietokantaratkaisujen suorituskyvyn vertailu, kandidaatintyö, 2021

3. **Mariani, Giacomo:** Design of an Application to Collect Data and Create Animations from Visual Algorithm Simulation Exercises, M.Sc. Thesis, 2020
4. **von Bergmann, Wilhelm:** Rinnakkaisuus ja ohjelmointikielten tuki rinnakkaisuudelle, kandidaatintyö, 2020
5. **Pekkinen, Juho:** Applying Lean Startup Methodology to Develop an Electronic Examination System, diplomityö, 2019
6. **Nurminen, Valtteri:** Oppimisympäristöjen yhteentoimivuuden mahdollistavat protokollat, kandidaatintyö, 2019
7. **Porvali, Jespe:** Scala-ohjelmointikielen standardikirjaston tuki rinnakkais- ja säieohjelmoinnille, kandidaatintyö, 2018
8. **Wihuri, Alvar:** Muuttuvatailaisten ja muuttumattomien listatyyppeiden tietorakenteiden erot Scala-ohjelmointikielessä, kandidaatintyö, 2018
9. **Vaskonen, Eero:** Opiskelijoiden ajankäytön mittaaminen verkko-opetuksessa, kandidaatintyö, 2018
10. **Lehtinen, Teemu:** Bootstrapping Learning Analytics Case: Aalto Online Learning, diplomityö, 2017
11. **Alho, Antti:** C++ hajautustaulujen vertailu, kandidaatintyö, 2016
12. **Pitkänen, Matias:** Pythonin hajautustaulujen toteutus, kandidaatintyö, 2016
13. **Stegmann, Roelant:** Student Performance in an Online Learning Platform - Predicting Grades given Student Features and Behaviour, diplomityö, 2016
14. **Rintahaka, Pyry:** Toteutukset C++ STL:n säiliöille map ja unordered_map, kandidaatintyö, 2015
15. **Haaranen, Lassi:** Achievement badges in educational context, M.Sc. Thesis, 2013
16. **Petteri, Juho:** Pelien käyttö ohjelmoinnin opetuksessa, kandidaatintyö, 2013
17. **Raksi, Maria:** Vuorovaikutteisten sähköisten oppimateriaalien edut ja ongelmat, kandidaatintyö, 2013
18. **Turtiainen, Petteri:** Pelillistäminen peruskoulun oppijärjestelmissä, kandidaatintyö, 2012
19. **Ivonen, Timo:** Verkkopohjaiset dokumenttien annotaatiotyökalut, kandidaatintyö, s2012
20. **Byman, Tommi:** Pelillistäminen oppimisjärjestelmissä, kandidaatintyö, 2012
21. **Hartikka, Lauri:** Javan HashMapin tarkastelu, kandidaatintyö, 2012
22. **Kaisanlahti, Jaakko:** Vuorovaikutteinen materiaali elektronisten kirjojen formaateissa, kandidaatintyö, 2012
23. **Sundholm, Ari:** Vilpin tunnistamisen algoritmeja ja ohjelmistoja, kandidaatintyö, 2011
24. **Kesti, Veli-Jussi:** Virtualisointiratkaisun valinta haittaohjelmatutkimukseen, kandidaatintyö, 2011
25. **Hovi, Ferrix:** Ohjelmointiharjoitusten turvallisuuden automaattinen arviointi, kandidaatintyö, 2011
26. **Ventus, Christoffer:** En empirisk undersökning av datastrukturer i Javas standardbibliotek, kandidatarbete, 2011
27. **Likitalo, Ville:** Visual programming: Introductory programming of data structures and algorithms, diplomityö, 2010
28. **Hakulinen, Lasse:** Using computer supported cooperative work systems in computer science education - Case: PeerWise at TKK, M.Sc. Thesis, 2010
29. **Ihantola, Petri:** On Automatically Assessed Programming Assignments: Designing Feedback, Lic.Sc. Thesis, 2010
30. **Taherkhani, Ahmad:** Recognizing Algorithms Using Roles of Variables, Language Constructs and Software Metrics: A Machine Learning Approach, Lic.Sc. Thesis, 2010
31. **Blomqvist, Cay:** Johdatus lajitteluverkkoihin, kandidaatintyö, 2010
32. **Kiiski, Kimmo:** Hyötypelien käytettävyys, kandidaatintyö, 2010
33. **Helminen, Juha:** Jype - An education-oriented integrated program visualization, visual debugging and programming exercise tool for python, M.Sc. Thesis, 2009
34. **Eirola, Axel Ilmari:** Pythonin Standardikirjasto, kandidaatintyö, 2009
35. **Taherkhani, Ahmad:** Static program analysis for recognizing sorting algorithms, M.Sc. Thesis, 2008
36. **Peinado, Isaac Jurado:** Visual improvements to the Matrix framework, M.Sc. Thesis, 2007
37. **Karavirta, Ville:** Facilitating Algorithm Animation Creation and Adoption in Education, Lic.Sc. Thesis, 2007

38. **Ihantola, Petri**: Automatic test data generation for programming exercises with symbolic execution and Java PathFinder, M.Sc. Thesis, 2006
39. **Karavirta, Ville**: XAAL - Extensible Algorithm Animation Language, M.Sc. Thesis, 2005
40. **Nikander, Jussi**: Managing Automatically Assessed Exercises in TRAKLA2, M.Sc. Thesis, 2005
41. **Markku Rontu**: Visual queries for a student information system, M.Sc. Thesis, 2004
42. **Lönnberg, Jan**: Visual testing of software, M.Sc. Thesis, 2003
43. **Torvinen, Petteri**: Tilastollinen analyysi algoritmisten harjoitustehtäväsovelmiä käytöstä, diplomityö, 2004
44. **Seppä, Mari**: The Requirements for the New Learning Systems and How TML Learning Systems Stand Up in Comparison, M.Sc. Thesis, 2000

Service

- Senior Program Committee Member, ICER 2021 Research Papers-track
- Task Force II for Learning Analytics, Ministry of Education and Culture, Finland, 2020-
- Chair of Koli Calling Doctoral Consortium, Helsinki, Finland, 19.-20.11.2019
- Expert evaluation on Associate Professor Lena Gumaelius promotion for docentur in Technology science learning, KTH Royal Institute of Technology, 2019
- Task Force I for Learning Analytics, Ministry of Education and Culture, Finland, 24.3.2017–31.12.2019.
- Guest Editor, ACM Transactions on Computing Education, The second Special Issue on Learning Analytics, 2018
- ITiCSE Conference Steering Committee, ACM, 2018-
- Site Chair, International Computing Education Research Conference (ACM ICER), 2017-2018
- Working Group Coordinator, Innovation and Technology in Computer Science Education (ACM ITiCSE), 2017
- Guest Editor, ACM Transactions on Computing Education, The first Special Issue on Learning Analytics, 2017
- Finnish Committee Member, Sino-Finnish Joint Learning Innovation Institute, University of Helsinki, 2016-
- Chair of Doctoral Consortium, SEFI Annual Conference, 2016
- Member of Scientific Committee, SEFI Annual Conference, 2016
- Associate editor, ACM Transactions on Computing Education (TOCE), 2015-2018
- Co-Chair of the Program Committee of The Frontiers in 6Education (FIE) Conference, 2015
- Member of the Program Committee of the 20th Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE), 2015
- Member of the Steering Committee of ITK-päivät (Interactive Technology in Education), 2015-
- Member of the Program Committee of Media Education Conference, 2015- (continuing)
- Chair of the Special Interest Group for Educational Data Mining and Learning Analytics in Digital Learning, CICERO Learning Network, 2014– (continuing)
- Member of the Program Committee of Learning and Teaching in Computing and Engineering conference (LaTiCE), 2013-2014
- Member of the Technical Program Committee of the 3rd and 4th IEEE International Conference on Technology for Education, T4E 2011-2012
- Member of the program committee of the Peda-forum Days (Peda-forum päivät), 2012
- Member of the group organizing annual NCP programming contest at Aalto, 2012-
- Chair of the 11th Koli Calling International Conference on Computing Education Research, 2011
- Chair of the 3rd Reflektori Symposium of Engineering Education, 2010
- Member of the Program Committee of IADIS International Conference: Cognition and Exploratory Learning in Digital Age (CELDA), 2009–2012
- Member of the Steering Committee of AlgoViz Project, Virginia Tech, 2009– (continuing)
- Chair of the Tools Workshop in the 8th and 9th Koli Calling International Conference on Computing Education Research, 2008–2009
- Member of the program committee of the (7th – 15th) Koli Calling International Conference on Computing Education Research, 2007–2015

- Chair of the Special Interest Group for Teaching Computer Science, the Finnish Society for Computer Science, 2007–2017
- Chair of the 1st – 4th Conference of the Finnish Virtual University Network on Basic Programming Studies, 2006–2008
- Editor of the proceedings of the 4th Annual Finnish/Baltic Sea Conference on Computer Science Education, 2004
- Editor of the proceedings of the Third Program Visualization Workshop, 2004
- Member of the program committee of the (3rd–6th) Program Visualization Workshop, 2004–2011
- Chair of the organizing committee, member of the program committee, and editor of the proceedings of the Sixth Annual Conference of the Finnish Society for Computer Science, 2003

Referee in Scientific conferences, journals, and graduate schools

- Media Education Conference, 2021
- ACM International Computing Education Research Conference (ICER), 2021
- Koli Calling International Conference on Computing Education Research, 2021
- Journal of Informatics in Education (INDFEDU), 2021
- IEEE Transactions on Learning Technologies (TLT), 2020
- 3rd Annual International GamiFIN conference, 2019
- Taylor & Francis Computer Science Education (CSE), 2018-2019
- Media Education Conference, 2017
- IEEE Transactions on Learning Technologies (TLT), 2017
- ACM International Computing Education Research Conference (ICER), 2017-2018
- ACM Transactions on Computing Education (TOCE), Special Issues 1 and 2 on Learning Analytics, 2016-2018
- Innovation and Technology in Computer Science Education (ACM ITiCSE), Working Groups, 2017
- ACM Transactions on Applied Perception, 2016-2017
- International Journal of Engineering Education (IJEE), 2016
- ACM Inroads, 2016
- The Frontiers in Education (FIE) Conference, IEEE, 2015
- Innovation and Technology in Computer Science Education (ITiCSE), ACM SIGCSE, 2015
- Computer Human Interaction Conference, ACM SIGCHI, 2015
- Learning and Teaching in Computing and Engineering conference (LaTiCE), 2013-2014
- Interaktiivinen tekniikka koulutuksessa (ITK tutkijatapaaminen), 2013- (continuing)
- Elsevier Computers and Education, 2011-2012
- International Conference on Technology for Education (T4E), IEEE, 2011-2012
- International Conference Cognition and Exploratory Learning in Digital Age (CELDA), IADIS, 2010–2012
- MDPI Algorithms (ISSN 1999-4893; CODEN: ALGOCH), 2010
- ACM Transactions on Computing Education (TOCE), 2009–2021
- IEEE Transactions on Learning Technologies (TLT), 2009-2011
- ACM Journal on Educational Resources in Computing (JERIC), 2008
- SEFI Annual Conference, SEFI, 2007-2008
- The 2nd and 3rd Reflektori Symposium of Engineering Education, 2007 and 2010
- Koli Calling International Conference on Computing Education Research, 2007–2015
- Journal of Educational Technology & Society journal (ETS), 2006–2013
- Technical Symposium on Computer Science Education (SIGCSE), ACM, 2005–2008
- Innovation and Technology in Computer Science Education conference (ITiCSE), ACM, 2004–2009
- International Conference on Advanced Learning Technologies (ICALT), IEEE, 2004
- The (3rd – 6th) Program Visualization Workshop (PVW), 2004–2011
- Helsinki Graduate School in Computer Science and Engineering (HeCSE), 2004–2005 IEEE
- IEEE Transactions on Visualization and Computer Graphics (TVCG), 2003

- TKTS Tietojenkäsittelytiede (TKT), the journal of The Finnish Society for Computer Science, 2003– (continuing)
- The International Dagstuhl Seminar on Software Visualization, 2001

Grants and awards

- D.Sc. thesis grade: pass with distinction, 2003
- M.Sc. thesis: pass with distinction, grade: 5/5, 1997
- Member of the group that was designated as a national Center of Excellence in University Education (korkealaatuisen opetuksen laatuyksikkö) in Department of Computer Science and Engineering at the Helsinki University of Technology by the Ministry of Education, 2010–2012 (900 000 EUR)
- Member of the group that was designated as national Center of Excellence in University Education (korkeakoulujen opetuksen laatuyksikkö) in Laboratory of Information Processing Science at the Helsinki University of Technology by the Ministry of Education, 2004–2006, 2001–2003
- Member of the group that was designated as Center of Excellence in Education (korkealaatuisen koulutuksen yksikkö) in Laboratory of Information Processing Science by the Helsinki University of Technology, 1999–2000

Scientific Visits

- Stanford University, Faculty of Graduate School of Education, January – August, 2014
- Stanford University, Faculty of Graduate School of Education, October 29 - November 13, 2013
- Virginia Tech, Department of Computer Science, June 3–6, 2012
- Rey Juan Carlos University, Technical Superior School of Computer Science Engineering, Department of Computer Science Languages and Systems I (Universidad Rey Juan Carlos, Escuela Técnica Superior de Ingeniería Informática, Departamento de Lenguajes y sistemas Informáticos I), April 26–29, 2011

Leading of research projects

- Smart Learning Environments and their Content Creation, Key Project, Government of Finland, 2018-2020 (1.3 MEUR)
- Aalto Online-Learning: Several A!OLE projects, Aalto University, 2016-2018 (300.000 EUR)
- Dynamic Digital Text: An Innovation in STEM Education (SAVI¹ eTextBook), Academy of Finland, 2012-2014 (300.000 EUR)
- Games and Learning, (SAVI FUN), Tekes – the Finnish Funding Agency for Technology and Innovation, 2012–2014 (500.000 EUR)
- Interoperability and Social Media in CS Learning Environments, Teknologiateollisuuden 100-vuotissäätiö, 2011–2014 (200 000 EUR)
- Broad Studies in Programming, Opetuksen kehittämishankerahat, Helsinki University of Technology, 2009–2010 (20 000 EUR)
- PeerWise - Adopting PeerWise to TKK – Student contributed assessment questions, Opetuksen kehittämishankerahat, Helsinki University of Technology, 2009 (12 000 EUR)
- Shibboleth Authentication for the Trakla2 Learning Environment, CSC The Finnish IT Center for Science, 2007 (5000 EUR)
- Finnish Network for Basic Programming Courses, Ministry of Education, Finland, 2006– 2008 (300 000 EUR)
- AAFAS — Automatic Assessment and Feedback on Algorithm Simulation, Academy of Finland, 2005–2008 (171 200 EUR)

Administrative and organizational service

- Learning Analytics Section, Aalto University, 2017-
- Deputy Member, Degree Programme Committee (CSE), Aalto University, 2016-

¹ Science Across Virtual Institutions (SAVI) projects are joint activity with Finnish Universities and US Academic Institutions

- CS IT Advisory Group, Department of Computer Science, Aalto University, 2015-2016
- Deputy member, LeIT Working Team, Aalto University, 2015-2017
- Member of the Aalto University Steering Group for ICT in Education and Communication 2011-2014
- Deputy Member, Degree Programme Committee (CSE), Aalto University, 2011– 2013
- Member, Board of Software Techniques Laboratory, Aalto University, 2002–2014
- Co-Chair of the Learning + Technology Research Group (previously SVG & COMPSER), 2000–
- Academic Advisor for a group of B.Sc. students, 2000-

Other activities

- Editor of Tietojenkäsittelytiede (nrs 17–33), the journal of The Finnish Society for Computer Science, (17 issues) 2002–2011
- Board member-at-large/Vice president in IEEE Education Society Chapter for the Joint Norway/Denmark/Finland/Iceland/ Sweden Sections, 2005–
- Union meeting representative of the The Finnish Society for Computer Science and a member of elective board, Finnish Information Processing Association (Tietotekniikan liitto), 2001–2004
- Board member (and Secretary 2000–2001) of The Finnish Society for Computer Science, 1999–2001

Memberships

- Institute for Systems and Technologies of Information, Control and Communication (INSTICC), 2007
- Institute of Electrical and Electronics Engineers (IEEE), 2005– (**continuing**)
- Association for Computing Machinery (ACM), Special Interest Group on Computer Science Education (SIGCSE), 2003–2009
- The Finnish Society for Computer Science, 1999– (**continuing**)

Publications

Articles in peer-reviewed international scientific journals	17
Articles in peer-reviewed international scientific edited volumes	7
Articles in peer-reviewed international conference proceedings	42
Scientific monographs (Thesis)	3
Articles in refereed National journals and conference proceedings	7
Books and edited Proceedings	3
Scientific articles, abstracts, and posters in non-refereed journals, conference proceedings, and report series	13
Computer Programs	3
Other	5
Total	100

Most of the publications can be downloaded from <http://www.cs.hut.fi/u/archie/publications/>

In addition, Google Scholar, Aalto People and some other places list some (but not all) of my publications.

Research statement

My research focuses on data structures and algorithms in Software Visualization. Especially I am interested in various applications of computer aided learning environments in computer science education. My current work is concerned with software tools and principles in the area of automatic assessment systems. Software Visualization is an active field of research in Software Engineering. Software visualization techniques are widely used in the areas of computer science education, software maintenance, reverse engineering, and re-engineering, where complex data need to be understood and a high degree of interaction is required. Software visualization systems can be used in teaching to help students understand how algorithms work as well as in program development as a way to help programmers understand their code better.

In year 2000, I established a research group called Software Visualization Group (SVG)¹ in the Laboratory of Software Techniques at the Helsinki University of Technology. I have acted as the coordinator for the group from the very beginning. The group merged with COMPSER (Computer Science Education Research Group) and currently we use the name Learning + technology Group (LeTech). The group members have published more than 300 scientific peer-reviewed articles since 2000. I'm an author in many of the publications having more than 40 co-authors.

I have instructed 8 PhD thesis, and managed to get funding from the Finnish Virtual University, Academy of Finland, Tekes (Finnish Funding Agency for Innovation), and Technology Industries (the projects are listed in my CV) for many of my PhD students. In addition, some of the students have graduate school positions including the funding. Our current interest is in learning analytics. For example, MOOCs (Massive Open Online Courses) provide an excellent source of big data to be analyzed in terms of educational data mining and machine learning. In addition, they provide a platform for applied software engineering research with a strong empirical component, and possibilities for publishing empirical results relevant to both researchers and practitioners. Empirical studies usually involve the collection and analysis of data that can be used to characterize, evaluate and reveal relationships between software systems and users. The results form a body of knowledge to well-formed theories. Such research also promotes the publications and research relevant to industry, thus addressing the gap between research and practice.

My strategic vision is to continue this kind of evidence-based development of learning environments. Benefits for software engineering are twofold: rigorous research will lead to publications and, at the same time, we can promote computer science education as the results can be immediately utilized in many CS courses.