

CURRICULUM VITAE – MARCUS SANDBERG – 2022-03-01

PERSONAL

Name: Erik Marcus Valentin Sandberg
Date of birth: May 29, 1977, Enköping, Uppland, Sweden
Gender: Male
Civil status: Married and four children
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Professional experience

- 2019 – Associate Professor at the Division of Sustainable and Industrial Construction, Luleå University of Technology
- 2016 – 2019 Senior Lecturer at the Division of Sustainable and Industrial Construction, Luleå University of Technology
- 2013 – 2016 Associate Senior Lecturer at the Division of Sustainable and Industrial Construction, Luleå University of Technology
- 2010 – 2012 Associate Senior Lecturer at Division of Innovation and Design, Luleå University of Technology
- 2008 – 2010 Assistant Professor at Division of Functional Product Development, Luleå University of Technology
- 2002 – 2007 PhD student at Luleå University of Technology

Education

- Ph.D in Functional Product Development. Luleå University of Technology, 2007, Advisor: Prof. Tobias Larsson
- Lic.Eng in Computer Aided Design, Luleå University of Technology, 2005.
- M.Sc in Mechanical Engineering (Applied mechanics), Luleå University of Technology, 2002.

Publications

Journals

1. Ramos Cáceres, C., Törnroth, S., Vesterlund, M., Johansson, A. and Sandberg, M. (2022) Data-Center Farming: Exploring the Potential of Industrial Symbiosis in a Subarctic Region. *Sustainability* vol. 14, 2774.
2. Eriksson, H., Sandberg, M., Jansson, G. and Lessing, J. (2021) Exploring Product Modularity in Residential Building Areas, *Buildings*, vol. 11(7).
3. Mukkavaara, J. and Sandberg, M. (2020) Architectural Design Exploration Using Generative Design: Framework Development and Case Study of a Residential Block. *Buildings*, vol. 10(11).
4. Mukkavaara, J., Sandberg, M., Sandberg, K., Pousette, A., and Norén J., (2020) Sustainability evaluation of timber dwellings in the north of Sweden based on environmental impact and optimization of energy and cost, *Procedia Manufacturing*, vol. 44, pp. 76-83.
5. Sandberg, M., Mukkavaara, J., Shadram, F., Olofsson, T., (2019) Multidisciplinary Optimization of Life-Cycle Energy and Cost Using a BIM-Based Master Model, *Sustainability*, vol. 11(1).
6. Sandberg, M., Tyapin, I., Kokkolaras, M., Lundbladh, A. and Isaksson, O., (2017) A knowledge-based master model approach exemplified with jet engine structural design, *Computers in Industry*, vol. 85, pp. 31-38.
7. Lundkvist, R., Meiling, J., Sandberg, M. and Olofsson, T. (2014) A proactive PDCA approach to defect management based on a Swedish construction project, *Construction Management and Economics*, vol. 32(11), pp. 1051-1065.
8. Meiling, J., Sandberg, M. and Johnsson, H. (2014) A study of a PDCA method used in less industrialized activities, *Construction Management and Economics*, vol. 32(1-2), pp. 109-125.
9. Sandberg, M., Tyapin, I., Kokkolaras, M., Isaksson, O., Aidanpää, J-O. and Larsson, T. (2011) A knowledge-based master-model approach with application to rotating machinery design, *Concurrent Engineering: Research and Applications*, vol. 19(4), pp. 295-305.
10. Sandberg, M., Johnsson, H. and Larsson, T., (2008) Knowledge-based engineering in construction: the prefabricated timber housing case, *Journal of Information Technology in Construction*, vol. 13, pp. 408-420.
11. Sandberg, M., Boart, P. and Larsson, T. (2005) Functional product life-cycle simulation model for cost estimation in conceptual design of jet engine components, *Concurrent Engineering: Research and Applications*, vol. 13, pp. 331-342.

Conference (peer-reviewed)

1. Dehghani Tafti, A., Engström, D., and Sandberg, M. (2022) Towards understanding disruption in the market for professional services in construction, Abstract accepted for presentation in SBESFin – Emerging Concepts for Sustainable Built Environment.
2. Mukkavaara, J., Sandberg, M., Sandberg, K., Pousette, A. and Norén J. (2019) Sustainability life-cycle evaluation of timber dwellings in north of Sweden based on environmental impact and optimization of energy and cost, 1st International Conference on Optimization Driven Architectural Design, Amman, Jordan.
3. Eriksson, H., Sandberg, M., Mukkavaara, J., Jansson, G. and Stehn, L. (2019) Assessing Digital Information Management Between Design and Production in Industrialized House-Building – a case study, 36th International Symposium on Automation and Robotics in Construction (ISARC), Banff, Canada.

4. Ramos Cáceres, C., Sandberg, M. and Sotoca, A. (2019) Data center and the city: A potential for urban synergies, AESOP 2019 (Association of European Schools Of Planning) Annual Congress, Venice, Italy.
5. Shadram, F., Mukkavaara, J., Schade, J., Sandberg, M. and Olofsson, T. (2018) Trade-Off Optimization of Embodied Versus Operational Carbon Impact for Insulation and Window to Wall Ratio Design Choices: A Case Study, In Proceedings of the 10th International Conference in Sustainability on Energy and Buildings (SEB'18), Gold Coast, Australia.
6. Kubicki, S., Mukkavaara, J. and Sandberg, M. (2018) A master model approach for design and analysis of roof trusses, 35th International Symposium on Automation and Robotics in Construction (ISARC 2018)
7. Sandberg, M., Risberg, M., Ljung, A., Varagnolo, D. and Nilsson, M. (2017) A modelling methodology for assessing use of datacenter waste heat in greenhouses, *The 3rd International Conference on Environmental Science and Technology*, Budapest, Hungary.
8. Shadram, F., Mukkavaara, J., Schade, J., Sandberg, M. and Olofsson, T. (2017) A BIM-based method for analyzing the trade-off between embodied and operational energy, In Proceedings of the 2016 International Conference on Construction and Real Estate Management 2016, s. 59-70, American Society of Civil Engineers (ASCE)
9. Sandberg, M., Gerth, R. and Viklund, E. (2016) A design automation development process for building and bridge design, In proceedings of *CIB W78: 30th International Conference on Applications on IT in the AEC Industry*, Brisbane, Australia.
10. Sandberg, M., Gerth, R., Lu, W., Jansson, G., Mukkavaara, J. and Olofsson, T. (2016) Design automation in construction, In proceedings of *CIB W78: 30th International Conference on Applications on IT in the AEC Industry*, Brisbane, Australia.
11. Mukkavaara, J., Jansson, G., Holmberg, A. and Sandberg, M. (2016) Approach for automated planning using 5D-BIM, In proceedings of *CIB W78: 30th International Conference on Applications on IT in the AEC Industry*, Brisbane, Australia.
12. Viklund, E., Sandberg, M., Lidelöw, H. and Jansson G. (2016) Modularization based on commonalities in house-building requirements, In proceedings of *ICCREM 2016: International conference on construction and real estate management*, Edmonton, Canada
13. Sandberg, M., Jensen, P., Ramic, I. (2016) Knowledge-based bridge design, *Proceedings of the 19th Congress of IABSE Stockholm 2016: Challenges in Design and Construction of an Innovative and Sustainable Built Environment*
14. Sandberg, M. (2015) Towards a knowledge-based engineering methodology for construction, in Proceedings of *ICCREM 2015: Environment and the Sustainable Building: international conference on construction and real estate management* : August 11-12, 2015 Luleå, Sweden. Wang, Y., Olofsson, T., Shen, G. Q. & Bai, Y. (eds.).
15. Shadram, F., Sandberg, M., Schade J. and Olofsson, T. (2014) BIM-based environmental assessment in the building design process, in Proceedings of the *14th International Conference on Construction Applications of Virtual Reality in Construction and conference on Islamic Architecture*, Dubai, United Arab Emirates, 16-18 November.
16. Sandberg, M. and Olofsson, T. (2013) A product development approach to developing modularized and parametric building systems, in Proceedings of *CIB W78: 30th International Conference on Applications on IT in the AEC Industry*, Beijing, China, 9-12 October.

17. Tyapin, I., Sandberg, M., Kokkolaras, M., Lundbladh, A. and Isaksson, O. (2012) Jet engine design optimization using knowledge-based master models, In Proceedings of *ASME Turbo Expo*, Copenhagen, Denmark, 11-15 June.
18. Sandberg, M., Tyapin, I., Kokkolaras, M. and Isaksson, O. (2011) A knowledge-based master modeling approach to system analysis and design, in Proceedings of *International Conference on Engineering Design*, Copenhagen, Denmark.
19. Sandberg, M., Kokkolaras, M., Aidanpää, J.-O., Isaksson, O. and Larsson, T. (2009) Whole jet engine analysis and design optimization: a master modeling approach, in Proceedings of *World Congress of Structural Multidisciplinary Optimization*, Lisbon, Portugal.
20. Meiling, J. and Sandberg, M. (2009) Towards a feedback model for off-site construction. *25th Annual ARCOM Conference: Association of Researchers in Construction Management*. Nottingham, Storbritannien, UK.
21. Nergård, H., Sandberg, M. and Larsson, T. (2009) Towards life-cycle awareness in decision support tools for engineering design, in Proceedings of *International Conference on Engineering Design*, Stanford, USA.
22. Jensen, P., Olofsson, T., Sandberg, M. and Malmgren, L. (2008) Reducing complexity of customized prefabricated buildings through modularization and IT support, in Proceedings of *International Conference on Information Technology in Construction*, Santiago.
23. Sandberg, M. (2007) Manufacturability evaluation in early design: on the dependency of business commitment, in Proceedings of *Advances in manufacturing technology - XXI: proceedings of the 5th international conference on manufacturing research (ICMR 2007)*, Leicester, UK.
24. Sandberg, M. and Larsson, T. (2006) Automating redesign of sheet-metal parts in automotive industry using KBE and CBR, in Proceedings of *IDETC/CIE*, Philadelphia, PA, USA, 2006.
25. Boart, P., Sandberg, M., Nergård, H. and Larsson, T. (2005) A multidisciplinary design tool with downstream processes embedded for conceptual design and evaluation, in Proceedings of *Proceedings of 15th International Conference on Engineering Design: ICED 05*, Melbourne, Australia.
26. Sandberg, M., Åström, P., Näsström, M. and Larsson, T. (2005) A design tool integrating CAD and virtual manufacturing for distortion assessment, in Proceedings of *Proceedings of the International Conference on Engineering Design: ICED 05*, Melbourne.

Other publications

1. Ramos Cáceres, C., Sandberg, M. and Sotoca, A. (2020) Analysis of urban scale factors for data center waste-heat use: Three case studies in Sweden, *35th PLEA Conference – Sustainable architecture and urban design*, A Coruña.
2. Sandberg, M. (2010) A knowledge-based master-model approach for mechanical whole jet engine optimization. Abstract presented at *Flygteknik*. Stockholm
3. Sandberg, M. (2003) *Knowledge-based engineering: In product development*, Technical report, Luleå University of Technology.

Short description of research profile

Dr. Marcus Sandberg, is Associate Professor in Construction Management and Building Technology and his research expertise is within design automation for sustainable building. He has a background in mechanical engineering and has lead and done research in collaboration with the aerospace and automotive industry. Since 2013 he works within the construction management research field mainly with projects considering virtual and sustainable design of buildings using optimization and generative design techniques.

Projects

- 2021- **Systematic construction**, Contract research with Peab
- 2021- **Incremental systematization of design and production**, Richertska stiftelsen
- 2021- **Digital workflow for sustainability-optimized and correctly climate-declared residential buildings**, Smart built environment, Formas
- 2020- **Customer focused service development based on automation**, Smart built environment, Formas
- 2019- **Computer-driven optimizations for improving sustainability performance of buildings**, The Swedish energy agency
- 2019- **Life-cycle energy optimization of new and retrofitting buildings**, Formas, *project leader*
- 2018- **Multifunctional Data centers**, The Swedish energy agency, *project leader*
- 2018- **DC-farming**, VINNOVA
- 2017-2020 **Digitalized Construction**, Smart Built Environment, Formas
- 2017-2020 **Kiruna Sustainability Center**, VINNOVA, Tillväxtverket
- 2017 **Food on the roof**, Luleå University of Technology
- 2016-2017 **Modular and energy efficient data centers in wood**, The Swedish energy agency
- 2016-2017 **Green Power – using waste heat from data centers**, The Swedish energy agency, *project leader*
- 2013-2017 **ATTRACT: Attractive and Sustainable Cities in Cold Climate**, VINNOVA
- 2012 **Decision support for road design in early phases**, Richertska stiftelsen
- 2011-2012 **Så nätt: Collaboration as enabler for light weight vehicles**, FFI
- 2011-2012 **CRESCENDO**, FP7
- 2009-2011 **Mechanical whole engine conceptual design and analysis: A Methodology for Optimization, Integration and Automation (METOPIA)**, NFFP5, VINNOVA, *academic project leader*
- 2008-2009 **Mechanical whole engine modelling**, NFFPV4202, VINNOVA
- 2007 **Rule-based design within the Centre for Lean Wood Engineering**, VINNOVA
- 2006 **Knowledge Driven Functional Product Development**, pilot project for the Faste Laboratory, VINNOVA
- 2002-2005 **Design for Fabrication within the programme Tillverkningsindustrins produktframtagning**, VINNOVA

Visits

2005 Sep-Dec	Visiting post-graduate student at The University of Arizona, Tucson, AZ, USA
2001 Jun-Dec	Conducted master's thesis project at Monash University, Melbourne, Australia

Supervision of graduate students

Main supervisor

- Abbas Tafti, Luleå University of Technology, the Division of Sustainable and Industrial Construction, 2021- (Industrial PhD student at WSP)
- Jani Mukkavaara, Luleå University of Technology, the Division of Sustainable and Industrial Construction, 2020-2021. Doctoral thesis: Exploration and Optimization of Building Design Solutions using Computational Design

Assistant supervisor

- Cristina, Ramos Caceres, Luleå University of Technology, the Division of Architecture and Water, 2018-
- Henrik Eriksson, Luleå University of Technology, the Division of Sustainable and Industrial Construction, 2018-
- Jani Mukkavaara, Luleå University of Technology, the Division of Sustainable and Industrial Construction, 2016-2019
- Farshid Shadram, Luleå University of Technology, Division of Sustainable and Industrial Construction, 2013-2018. Doctoral thesis: Assessment and optimization of life cycle energy use in buildings.
- Robert Lundkvist, Luleå University of Technology, Division of Structural and Construction Engineering, 2013-2015. Doctoral thesis: Experience feedback in industrialised house-building: The impact of production strategies.
- Alessandro Bertoni, Luleå University of Technology, Division of Innovation and Design, 2010-2013. Doctoral thesis: Value Driven Design – a methodology for Value-oriented decision making in preliminary design.
- Peter Thor, industrial doctoral student, Volvo Aero, 2009 – 2012. Licentiate thesis: Enabling Engineering Support for Integrated Product and Service Innovation.
- Erik Söderholm, Luleå University of Technology, Division of Structural Engineering, 2008 – 2011. Licentiate thesis: Applicability of continuous improvements in industrialised construction.
- John Meiling, Luleå University of Technology, Division of Structural Engineering, 2008 – 2010. Doctoral thesis: Continuous improvement and experience feedback in off-site construction: timber-framed module prefabrication
- Henrik Nergård, Luleå University of Technology, 2008-2009. Doctoral thesis: Knowledge Engineering Models as Experience Carriers

Scientific assignments

Grading committee

- PhD defence of Mikael Viklund Tallgren, Department of Architecture and Civil Engineering, Chalmers, Sweden. Title of thesis: Collaborative production planning with BIM – Design, development and evaluation of a Virtual Production Planning system. Chair of the grading committee. 2021-11-19
- PhD defence of Jesper Kranker Larsen, Department of Mechanical and Manufacturing Engineering, Aalborg University, Denmark. Title of thesis: Streamlining publicly funded construction projects – proactive planning and cost scheduling to reduce critical increases. 2015-11-13

Discussion leader

- Licentiate seminar of Shamnath Thajudeen, Jönköping University. Title of thesis: Supporting the Design Phase of Industrialised House Building Using a Product Platform Approach – A Case Study of a Timber based Post and Beam Building System. 2020-05-28
- Licentiate seminar of Martin Haller, Division of Structural and construction Engineering. Title of thesis: Critical Design Activities in House-Building Projects - an Industrial Process Perspective. 2012-02-14

Session Chair

- Sustainability Design, OptArch conference, Amman, Jordan, 2019
- Construction and Production: Decision support, IABSE Congress, Stockholm, Sweden, 2016

The Swedish Universities of the Built Environment

- Leader for Construction and Facilities Management group. 2015 – 2017

Expert reviewer for scientific positions

- Senior Lecturer position at Mid Sweden University. 2020 Nov

Reviewer for

- Computers in Industry, Elsevier: 19 papers since 2011
- Computer Aided Design, Elsevier: 7 papers since 2007
- Sustainability, MDPI: 5 papers since 2014
- Automation in Construction, Elsevier, 3 papers since 2019
- Buildings, MDPI, 3 papers since 2019
- Construction Management and Economics, Taylor and Francis, 2 papers since 2020
- Journal of Building Engineering, Elsevier, 2 papers since 2019
- Advanced Engineering Informatics, Elsevier: 2 papers since 2016
- International Journal of Geo-Information, MDPI – Member of Reviewer Board, 3 papers since 2020
- Concurrent Engineering: Research and Applications, Sage: 2 papers since 2012
- Journal of Information Technology in Construction: 2 papers since 2015
- Journal of Engineering Design, Taylor and Francis, 2 papers since 2012
- CivilEng, MDPI
- Geomatics and Environmental Engineering, AGH University of Science and Technology Press
- Artificial intelligence for Engineering Design, Analysis and Manufacturing, Cambridge University Press

- Journal of Design Research, Inderscience
- Transactions in Engineering Management, IEEE
- International Journal of Production Economics, Elsevier
- Journal of the Operational Research Society, Palgrave Macmillan
- Journal of Educational Administration and Policy Studies, Academic Journals
- Applied Sciences, MDPI
- Remote Sensing, MDPI

Other assignments

2021 - Member of the LTU quality advisory board as representative for the Department of Civil, Environmental and Natural Resources Engineering

Funding

I have been involved in application writing that have resulted in a total of **25 MSEK**:

- Incremental systematization of design and production of building super structures based on digital product models, **0,4 MSEK**, 2021
- Digital workflow for sustainability-optimized and correctly climate-declared residential buildings, **0.9 MSEK**, 2021
- Computer-driven optimizations for improving sustainability performance of buildings, The Swedish energy agency, **3 MSEK**, 2019
- Life-cycle energy optimization of new and retrofitting buildings, FORMAS, **3 MSEK**, 2018
- Eco districts, FORMAS, **3 MSEK**, 2018
- DC-farming, VINNOVA, **4.6 MSEK**, 2018
- Cloudberry datacenters, Multifunctional datacenters, The Swedish energy agency, **3.5 MSEK**, 2018.
- Food on the roof. Luleå University of Technology, **0.2 MSEK**, 2017
- Modular and energy efficient datacenters in wood. The Swedish energy agency. **0.8 MSEK**, 2016
- Green power – using waste heat from datacenters. The Swedish energy agency. **2.1 MSEK**, 2016.
- Mechanical whole engine conceptual design and analysis: A METHodology for OPTimization, Integration and Automation, VINNOVA. **4.4 MSEK**, 2009.
- Decision support for road design in early phases, Richertska stiftelsen. **0.3 MSEK**, 2012.

Pedagogical education

- Programme driven course development (CDIO), 3 ECTS, LTU, 2015 – 2016.
- Supervision course, step 1 and 2, LTU, 2003 and 2008 – 2009.
- Pedagogical course for lecturers, 7.5 ECTS, LTU, 2006.

Other skills

- Fluent in Swedish (native) and English
- Experienced in computers
 - Software (excerpt): Revit, Vico Office, AutoCAD, Office, Navisworks, BidCon, Bluebeam, Unity 3D, UG/NX, Matlab, IDEAS, Visilean

Teaching

Graduate level

- Platforms in product development, 7.5 hp, Jönköping University, **lecturer**, 2018
- Database technology, 3 hp, LTU, **lecturer**, 2014
- Knowledge enabled engineering, 7.5 hp, LTU, **lecturer, computer lab teacher**, 2010
- PV31, 7.5 hp, LTU, **lecturer, computer lab teacher**, 2009, 2011
- Parametric design, 7.5 hp, LTU, **lecturer, computer lab teacher**, 2008

Undergraduate level

- W7010B Construction Management II, 7.5 ECTS, **examiner and responsible teacher** 2020-
- P7006B Virtual construction, 7.5 ECTS, lab teacher 2014-, **responsible teacher** 2015-, **examiner** 2017-
- P0011B Computer tools in engineering, 7.5 ECTS, **responsible, teacher and examiner** 2013-2019
- W0007B CAD and VR, 7.5 ECTS, **responsible teacher** 2013, **computer lab teacher** 2014-2019, 2021
- W7003B Virtual design, 7.5 ECTS, **responsible teacher** 2013, **computer lab teacher** 2017-2018
- P7008B Construction companies' business development, 7.5 ECTS, **course coordinator** 2015
- V0011B Planning and construction, 15 ECTS, **computer lab teacher** 2014
- M7015T Theory and Methodology for Engineering Product Development, 7.5 ECTS, **lecturer**, 2008-, **responsible teacher and examiner** 2011-2012
- M0024T Project C (Sustainable living), **project supervisor**, 2012,
- Arena Innovative Technology and Entrepreneurship, **supervisor student projects**, 2006–2007
- SIRIUS Creative Product Development, 30 ECTS, Final course for masters of science in mechanical engineering. **Supervisor** 2002, 2006
- MTM061/MTM116/MTM117/MTM153 Computer aided design, basic and advanced level, **computer lab teacher and lecturer**. 2002-2006

Examiner and advisor for master thesis project students (Examiner for 17, advisor for 23)

- Rasmus Andersson, Civil Engineering, 2022. Title: The effect of super structure material on climate impact, production time and cost. **Advisor.**
- Jesper Agerborn, Architectural Engineering, 2022. Title: Climate calculations based on BIM. **Advisor.**
- Rebecca Söndergaard, Civil engineering, 2021. Title: Balancing LCA and cost for construction components. **Examiner.**
- Sara Sundström, Civil engineering, 2021. Title: BIM and machine control in the quality assurance of road construction. **Advisor.**
- Max Andersson, Civil engineering, 2021. Title: Digital construction logistics. **Examiner.**
- Joar Sundberg, Civil engineering, 2021. Title: Standardized bidding for minimized waste in house building. **Examiner.**
- Ellen Göransson, Architectural Engineering, 2021. Title: Communication enhancements during building design. **Examiner.**
- Jesper Vårö Nilsson, Architectural Engineering, 2021. Title: Mapping of architect's design intent and factors affecting student housing design and visualization. **Advisor.**
- Malin Andersson, Architectural Engineering, 2021. Title: From LCA to carbon footprint reports for contractors. **Examiner.**
- Max Waern, Architectural Engineering, 2021. Title: The client's role for increasing reuse of building materials. **Examiner.**
- Felicia Ingegerd Johansson and Martin Hjertaker, Architectural Engineering, 2021. Title: Engineering consultant's business opportunities of automatic carbon footprint reports. **Examiner.**
- Christian Sjödin, Architectural Engineering, 2021. Title: The dependence of BIM Level of development for LCA. **Advisor.**
- Sofia Riglert, Architectural Engineering, 2020. Title: Development of standardized building systems for inner walls. **Examiner.**
- Sofia Eliasson, Architectural Engineering, 2020. Title: Parametric design tools during the planning process. **Examiner.**
- Anders Olander, Civil Engineering, 2020. Title: VDC during the tendering process. **Advisor.**
- Amanda Berglund, Civil Engineering, 2020. Title: Economic consequences due to inadequate building documents. **Advisor.**
- Daniel Eriksson, Architectural Engineering, 2020. Title: BIM in facilities management. **Advisor.**
- Ali Dariab Hossein, Architectural Engineering, 2019. Title: Customer value or design automation. **Examiner.**
- Christian Johansson, Architectural Engineering, 2019. Title: Linking construction drawings with models. **Examiner.**
- Jonathan Forss, Architectural Engineering, 2019. Title: Mapping design automation. **Examiner.**
- Johan Westring, Civil Engineering, 2019. Title: Successive design – mapping the information flow. **Examiner.**
- Sanar Behnan Elias, Civil Engineering, 2019. Title: BIM-supported site logistics. **Advisor.**
- Emma Lööv, Architectural Engineering, 2018. Title: BIM-model requirements for production. **Advisor.**

- Gustav Vestberg, Civil Engineering, 2018. Title: Traceability from production to construction site. **Examiner.**
- Andreas Lindberg, Civil Engineering, 2018. Title: BIM-based parametric foundations. **Advisor.**
- Linus Häggström, Civil Engineering, 2018. Title: Using the semantic web within construction. **Examiner.**
- Rasmus Klang, Civil Engineering, 2018. Title: Mapping and analysis of a take-off process within construction. **Advisor.**
- Kristian Gullner, Civil Engineering, 2017. Title: Framework for modularised calculations. **Advisor.**
- Marcus Lundgren, Civil Engineering, 2017. Title: Efficient use of BIM at consultant firms. **Examiner and advisor.**
- Mustafa Galali, Architectural Engineering, 2017. Title: More effective information flow for quantity take offs. **Advisor.**
- Marika Gille, Civil Engineering, 2017. Title: Modular datacentre design. **Advisor.**
- Fredrick Gren, Civil Engineering, 2016-. Title: A more effective process for measurements in construction. **Advisor.**
- Joel Aho, Civil Engineering, 2016-2017. Title: Model-based time scheduling for combined industrial and site construction. **Examiner and advisor.**
- Zinaida Ramic, Civil Engineering, 2014- 2015. Title: A product development process for configurable bridges. **Advisor.**
- Marcus Herder, Civil Engineering, 2013. Title: Parametric retaining wall. **Advisor.**
- Florian Thiery, Mechanical Engineering, 2009 – 2010. Title: 3D rotordynamics model of a whole jet engine. **Advisor.**
- Albert Tennllado Cunillera, Mechanical Engineering, 2008-2009. Title: Structural Model for Jet Engine Configuration Using Knowledge-Based Engineering. **Advisor.**
- Caroline Nyström, Civil Engineering, 2007-2008. Title: Regelstyrd 3D projektering vid insättning av trappor i trävolymmer (Swedish). **Advisor.**
- Mohammed Golkar, Space Engineering, 2005-2006. Title: Development of Knowledge Based Engineering Support for Design and Analysis of Car Components Using NX-Knowledge Fusion. **Advisor.**

Course development

- W7010B – Construction management II
 - P7006B – Virtual construction
 - P0011B (K0001B) – Computer tools in engineering
 - W7003B – Virtual design
 - W0007B – CAD and VR
 - M7015T Theory and Methodology for Engineering Product Development
 - MTM116/MTM117/MTM153
 - Parametric design (post-graduate course)
 - PV31 - Modelling and simulation (post-graduate course)
 - Knowledge enabled engineering (post-graduate course)
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Parental leave

I have between 2004 and 2019 been working between 20 and 100%.