

Personal Details

Mehdi Tarkian, 1982-04-07

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Biography

Mehdi earned an **MSc in 2007 in Mechanical Engineering from Linköping University**, and a **PhD-degree in 2012 in Mechanical Engineering from Linköping University**. From 2012 Mehdi has been mainly involved in the spin-off company XperDi AB, with part time position as assistant professor at division of Machine Design in LiU.

Mehdi's key research interest has been in the field of Design Automation and Multidisciplinary Optimization. The challenges have been to establish methods for knowledge capture, storage, execution and optimization. The close collaboration with ABB has enabled the design methodologies to be evaluated in real industrial context, resulting in practical and industry related results. The trend continued at XperDi AB with implementation of state of the art design automation solutions for industry customers.

Projects

- Developed and delivered a transformer configurator at the request of ABB in Ludvika, 2017
- Developed and delivered a train seat configurator at the request of Bombardier Transportation, 2013-2016
- Developed and delivered a bus seat configurator at the request of Scania, 2015
- Responsible for the execution of the Design Automation and Optimization part of the initiative for next generation high speed trains by Bombardier Transportation, 2012-2013
- Part of the ABB initiative for developing Design Automation for industrial robots, 2011-2102
- Developed a load frame configurator at the request of Toyota Material Handling, 2012
- Part of the ABB initiative for developing design frameworks for unconventional industrial robots, 2007-2011
- Part of the novel aircraft design research venture at LiU, 2007-2008

Honors

- Several letters from dean for recognition of high course evaluation for the course TMKT57 Product Modeling
- Received iplom from i-sektionen for the course TMKT57 Product Modeling, 2016-2017
- Best Aerospace thesis, Flygtekniska Föreningen, Linköping, 2007
- Top ten best paper, ASME IDETC/CIE conference, Washington DC, 2011
- Top ten best paper, ICED conference, Copenhagen, 2011

Academic Courses and Supervising

- Co-developed and currently examiner for the Design Automation course **TMKT79**, Collaborative Multidisciplinary Design Optimization. The course has grown to 60 students in 2017 and the student ratings are constantly improving. Since 2014
- Co-developed and currently examiner for the Design Automation course **TMKT57**, Product Modeling. The course has more than 120 participants and receives above 4.0 student ratings since 2008
- Supervising PhD Student
 - Co-supervised Edris Safavi (disputation 2016)
 - Currently co-supervisor for 2 PhD-students
- Supervised more than 40 master theses
- Teaching:
 - Design Methodology and Analysis **TMS18**, lab assistant, 2007-2008, Swedish
 - Aircraft and Vehicle Design **TMAL02**, lab assistant, 2007-2008, English
 - Aircraft Conceptual Design **TMAL51**, lab assistant, 2007-2009, English
 - Machine Elements **TMKT39**, teacher, 2008-2010, Swedish
 - Design Optimization **TMKT48**, lab assistant, 2009-2011, English
 - Project Course **TMPM01**, project leader, 2009-2012, Swedish
 - Product Modeling **TMKT57**, 2008-, English
 - Collaborative Multidisciplinary Design Optimization **TMKT79**, 2014-, English

Publications

Journals:

1. Papageorgiou A., Tarkian M., Amadori K., Ölvander J., 2017, Multidisciplinary Optimization of Unmanned Aircraft Considering Radar Signature, Sensors, and Trajectory Constraints - Accepted for publication in AIAA Journal of Aircraft
2. Honarpardaz, M., Tarkian, M., Ölvander, J., Feng, X., 2017b. Experimental verification of design automation methods for robotic finger. *Robot. Auton. Syst.* 94, 89–101. doi:10.1016/j.robot.2017.04.011
3. Honarpardaz, M., Tarkian, M., Ölvander, J., Feng, X., 2017a. Finger design automation for industrial robot grippers: A review. *Robot. Auton. Syst.* 87, 104–119. doi:10.1016/j.robot.2016.10.003
4. Safavi E., Tarkian M., Ölvander J., Najafabadi H. N. and Chaitanya M. V., "Implementation of collaborative multidisciplinary design optimization for conceptual design of a complex engineering product", *Journal of Concurrent Engineering* doi:10.1177/1063293X16661224 first published on August 1, 2016.
5. Safavi E., Tarkian M., Gavel H. and Ölvander J. "Collaborative multidisciplinary design optimization: A framework applied on aircraft conceptual system design", *Journal of Concurrent Engineering*, 23: 236-249, doi:10.1177/1063293X15587020, first published on June 3, 2015.
6. Tarkian, M., Persson, J., Ölvander, J., Feng, X., "Multidisciplinary Design Optimization of Modular Industrial Robots by Utilizing High Level CAD templates", *Journal of Mechanical Design*, <http://dx.doi.org/10.1115/1.4007697>, 2012.
7. Amadori, K., Tarkian, M., Ölvander, J., Krus, P., "Flexible and Robust CAD Models for Design Automation", *Advanced Engineering Informatics*. 2012;26(2):180-95

Conferences:

1. Honarpardaz, Mohammadali, Tarkian, M., Feng, X., Sirkett, D., Ölvander, J., 2016. Generic Automated Finger Design V05BT07A071. doi:10.1115/DETC2016-60514
2. Honarpardaz, M., Tarkian, M., Sirkett, D., Ölvander, J., Feng, X., Elf, J., Sjögren, R., 2016. Generic Automated Multi-function Finger Design. IOP Conf. Ser. Mater. Sci. Eng. 157, 012015. doi:10.1088/1757-899X/157/1/012015
3. Tarkian, M., Vemula, B., Feng X., Ölvander, J., "Metamodel Based Design Automation – Applied on Multidisciplinary Design Optimization of Industrial Robots", Proceedings of the ASME 2012 International Design Engineering Technical Conferences & Computers and information in Engineering Conference, Chicago, USA, Aug 2012
4. Tarkian, M., Persson, J. A., Ölvander, J., Feng, X., "Multidisciplinary Design Optimization of Modular Industrial Robots", Proceedings of the ASME 2011 International Design Engineering Technical Conferences & Computers and information in Engineering Conference, Washington, USA, Aug-Sep 2011
5. Ölvander J., Tarkian M., Feng X., Multi-objective Optimization of a family of Industrial Robots, in Multi-objective Evolutionary Optimisation for Product Design and Manufacturing, Wang L., Ng A. H.C., Deb K. (editors), pp. 189-217, Springer 2011.
6. Tarkian, M., A., Ölvander, J., Feng, X., Pettersson, M. "Product Platform Automation for Optimal Configuration of Industrial Robot Families", ICED 2011, Copenhagen, Denmark, Aug 2011
7. Nezhadali, V., Kayani O., Razzaq, H., Tarkian, M., "Evaluation of an Automated Design and Optimization Framework for Modular Robots Using a Physical Prototype", ICED 2011, Copenhagen, Denmark, Aug 2011
8. Feng, X., Wäppling, D., Andersson, H., Ölvander, J., Tarkian, M., "Multi-Objective Optimization in Industrial Robotic Cell Design", Proceedings of the ASME 2010 International Design Engineering Technical Conferences & Computers and information in Engineering Conference, Montreal, Canada, Aug 2010
9. Edris Safavi, Mehdi Tarkian, Johan Ölvander, "Rapid Concept Realization for Conceptual Design of Modular Industrial Robots", NordDesign, Gothenburg, Sweden, 2010, Aug 2010
10. Venkata, R. C. M., Tarkian, M., Jouannet, C., "Model Based Aircraft Control System Design and Simulation", 27th Congress of International Council of the Aeronautical Sciences, Nice, France, Sep 2010.
11. Tarkian, M. Ölvander, J., Feng X., Pettersson M., "Design Automation of Modular Industrial Robots", Proceedings of the ASME 2009 International Design Engineering Technical Conferences & Computers and information in Engineering Conference, San Diego, USA, Sept 2009.
12. Tarkian M., Ölvander J., Lundén B., "Integration of Parametric CAD and Dynamic Models for Industrial Robot Design and Optimization", Proceedings of the ASME 2008 International Design Engineering Technical Conferences & Computers and information in Engineering Conference, New York, USA, Aug 2008.
13. Tarkian, M., Zaldivar, F., "Aircraft Parametric 3D Modeling and Panel Code Analysis for Conceptual Design", 26th Congress of International Council of the Aeronautical Sciences, Anchorage, USA, Sep 2008
14. Tarkian, M., Ölvander, J., Berry P., "Exploring Parametric CAD-models in Aircraft Conceptual Design", 49th AIAA Structures, Structural Dynamics, and Material Conference, Schaumburg, USA, Apr 2008