

Curriculum Vitae



Mehdi Kargahi

PhD, Associate Professor

Dependable Real-Time Systems Research Lab. (<http://drts.ut.ac.ir>)

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1. Research Interests

Cyber-Physical Systems

Real-Time and Embedded Systems

Stochastic Systems

Energy, Power, and Thermal Management

Modeling, Test, and Evaluation of Embedded Systems

2. Educational Background

2007, Ph.D., Computer Engineering, Sharif University of Technology, Tehran, Iran.

2001, M.Sc., Computer Engineering, Sharif University of Technology, Tehran, Iran

1998, B.Sc., Computer Engineering, Amir Kabir University of Technology, Tehran, Iran.

1994, Diploma (high-school), Mathematics and Physics, Alborz High School, Tehran, Iran

3. Academic Experience

- Associate Professor, School of Electrical and Computer Engineering, University of Tehran (2013-Now)
- Visiting Professor, Embedded Systems, Malardalen University (MDH) (2019)
- On sabbatical leave at Computer Engineering and Networks Laboratory, Department Information Technology and Electrical Engineering (D-ITET), Swiss Federal Institute of Technology Zurich (ETHZ) (2018)
- Assistant Professor, School of Electrical and Computer Engineering, University of Tehran (2007-2013)
- On sabbatical leave at Department of Electrical and Computer Engineering, University of Victoria, British Columbia, Canada (2006)

4. Administrative Experience

Representative of UT in MSRT in the capacity of Council on the Expansion and Planning of Higher Education (2019-2021)

Chair of IEEE Iran Section Conferences Committee (2019-2021)

Vice-president of the Cyber-Physical Systems Society of Iran (2019-2022)

Coordinator of an Erasmus+ collaboration agreement (**including master level double-degree**) between UT and MDH (Sweden) on Software Engineering and Embedded System (2018-2020)

Director of the Cyber-Physical Systems Research Center, University of Tehran (Feb. 2017-Now)

Chair of Software Engineering Group (2013-2017)

Head of Network and Computer Centers in the School of ECE, Univ. Tehran (2009-2013)

Supervisor of Dependable Real-Time Systems (DRTS) Research Laboratory in the School of ECE, Univ. Tehran (2008-Now)

5. Professional Activities

Invited Talk:

- Cyber-Physical Systems Time Sensitivity (Iran Academy of Science) (June 2017)

Steering Committee/Founder:

- Real-Time and Embedded Systems and Technologies (RTEST), <http://rtest-conf.org>
- Cyber-Physical Systems Society of Iran (CPSSI)
- Cyber-Physical Systems Research Center, University of Tehran (CPS-RC), <http://cps.ut.ac.ir>

Program/General Chair:

- 2020 Real-Time and Embedded Systems and Technologies (RTEST 2020)-University of Tehran, <http://cs.ipm.ac.ir/RTEST/2020>
- 2018 Real-Time and Embedded Systems and Technologies (RTEST 2018)-University of Tehran, <http://2018.rtest-conf.org>
- 2016 Verification and Validation of Cyber-Physical Systems (iFM-V2CPS 2016)-Iceland

- 2016 Cyber-Physical Systems Summer School-Tehran
- 2015 Real-Time and Embedded Systems and Technologies (RTEST 2015)-Sharif University of Technology, <http://2015.rtest-conf.org>

IEEE (Computer Society) Membership:

- Member (2009-2013)
- Senior Member (2013-Now)
- Iran-Section Promotion Committee Member (2019-2021)

Research Project:

- Extending Android to support Soft Real-Time Applications (2018)
- Android Security Enhancement (2018)
- Android Application Energy/Performance Test and Analysis (2017-2019)
- Data Center Energy Optimization (Sep. 2016-Oct. 2017)
- Researcher in the School of Computer Science, Institute of theoretical studies in Physics and Mathematics (IPM) (2003-Now) [**2003-2012: Guest Researcher, 2012-2018: Resident Researcher**]
 - Performance Evaluation of Fault-Tolerant Real-Time Scheduling Algorithms, *School of Computer Science, Institute of theoretical studies in Physics and Mathematics (IPM)*, 2003-2004.
 - Power-Aware Fault-Tolerant Real-Time Scheduling Algorithms and their Performance Evaluation, *School of Computer Science, Institute of theoretical studies in Physics and Mathematics (IPM)*, 2004-2005.
 - Control Theoretic Adaptive Power-Aware Real-Time Scheduling, *School of Computer Science, Institute of theoretical studies in Physics and Mathematics (IPM)*, 2008-2009.
 - Dynamic Scheduling of Time/Utility and Instant-Value Constrained Distributed Real-Time Systems, *School of Computer Science, Institute of theoretical studies in Physics and Mathematics (IPM)*, 2010-2011.
 - Dynamic Scheduling of Time/Utility and Instant-Value Constrained Energy Harvesting Real-Time Systems, *School of Computer Science, Institute of theoretical studies in Physics and Mathematics (IPM)*, 2011-2012.
 - Temperature- and Environment-Aware QoS Analysis and Management in Real-Time Embedded Systems, *School of Computer Science, Institute of theoretical studies in Physics and Mathematics (IPM)*, 2012-2013. (Resident Researcher)
 - Analysis and Adaptive Management of Distributed Real-Time Embedded Systems with an Emphasis on the Inter-effects of Temperature, Energy and Performance, *School of Computer Science, Institute of theoretical studies in Physics and Mathematics (IPM)*, 2013-2014. (Resident Researcher)
 - Analysis and Predictability Enhancement of Stochastic and Distributed Real-Time Systems, *School of Computer Science, Institute of theoretical studies in Physics and Mathematics (IPM)*, 2014-2015. (Resident Researcher)
 - Analysis and Management of Mixed-Criticality Cyber-Physical Systems with Energy Considerations, *School of Computer Science, Institute of theoretical studies in Physics and Mathematics (IPM)*, 2015-2016. (Resident Researcher)
 - Analysis and Management of Mixed-Criticality Cyber-Physical Systems with Energy Considerations, *School of Computer Science, Institute of theoretical studies in Physics and Mathematics (IPM)*, 2016-2017. (Resident Researcher)
 - Research Proposal for Building, Energy, and Environment Management System with an IoT Approach, *School of Computer Science, Institute of theoretical studies in Physics and Mathematics (IPM)*, 2016-2017. (Research Contract)

- Analysis and Management of Mixed-Criticality Cyber-Physical Systems with Energy Considerations, *School of Computer Science, Institute of theoretical studies in Physics and Mathematics (IPM)*, 2017-2018. (Resident Researcher)
- Analysis and Management of Mixed-Criticality Cyber-Physical Systems with Energy Considerations, *School of Computer Science, Institute of theoretical studies in Physics and Mathematics (IPM)*, 2018-2019. (Resident Researcher)
- Testing and Optimizing Energy-constrained Cyber-Physical Systems, *School of Computer Science, Institute of theoretical studies in Physics and Mathematics (IPM)*, 2019-2020. (Resident Researcher)

Consultation:

- IRIMO Information System including software and database migration plan (Feb. 2010-2012)

Editorial Board:

- JCSE
- CKE

Guest Editor of a few SIs:

- JSA, SI on Testing and Verification of Non-Functional Aspects of CPS (2020)
- MICPRO, SI on Design for Resilience in CPS (2018)

PC Member:

- CPS&IoT (2020)
- CPSWEEK-WMC (2019)
- RTNS (2017, 2018, 2019)
- RTEST (2015, 2018, 2020)
- V2CPS (2016, 2017)
- CyPhy (2016, 2017, 2018, 2019[CW=CyPhy&WESE])
- ICEE (2007-2017)
- CSICC (2007-2018), Track Chair (2016-2019)
- ICCKE (2015-2017)
- TrustData (2014-2016)
- ISCISC (2014)
- CyberCity (2017)

Reviewer for:

- IEEE Transactions on Computers
- IEEE Transactions on Parallel and Distributed Systems
- IEEE Transactions on Industrial Informatics
- IEEE Transaction of Computer-Aided Design
- Elsevier Journal of Systems Architecture
- Elsevier Journal of Computers and Operations Research
- Elsevier Journal of Information Sciences
- Elsevier Journal of Information Processing Letters
- Elsevier Journal of Computers and Electrical Engineering
- Elsevier Journal of Computer and System Sciences

- Springer Journal of Supercomputing
- Springer Real-Time Systems Journal
- Journal of Industrial and Systems Engineering
- Journal of Computer Science and Engineering
- Journal of Scientia Iranica
- Journal of Computer and Knowledge Engineering

6. Courses Thought

Undergrad.

Operating Systems + Lab.
 Real-Time Embedded Systems
 Automata Theory
 Principles of Compiler Design
 Discrete Mathematical Structures

Grad.

Dependable Software: Design and Analysis
 Advanced Operating Systems
 Computer Systems Performance Evaluation
 Advanced Real-Time and Embedded Systems
 Cyber-Physical Systems
 Stochastic and Distributed Real-Time Systems

7. Visiting Researcher

2006: University of Victoria, British Columbia, Canada. (with Amirali Baniasadi)

2018: ETH Zurich, Switzerland. (with Lothar Thiele)

8. Publications

• Journals

- I. Moghaddas, M. E. Salehi, and M. Kargahi, "Aging-aware Instruction-level Statistical Dynamic Timing Analysis for Embedded Processors", *To appear in IEEE Transactions on Very Large Scale Integration Systems (TVLSI)*, 2019.
- M. Shirazi, M. Kargahi, and L. Thiele, "Performance Maximization of Energy-Variable Self-Powered (m, k)-firm Real-Time Systems", *To appear in Real-Time Systems Journal*, 2019.
- M. Alidoostnia, B. Bahrak, M. Kargahi, B. Fabian, "Detecting New Generations of Threats Using Attribute-Based Attack Graphs", *To appear in IET Information Security*, Vol. 13, No. 4, Available online: 31 Jan 2019. (DOI: [10.1049/iet-ifs.2018.5409](https://doi.org/10.1049/iet-ifs.2018.5409))

- M. Bisadi, A. Akrami, S. Teimourzadeh, F. Aminifar, M. Kargahi, and M. Shahidehpour, "Human in the Loop for Energy Management Systems", *IEEE Electrification Magazine*, Vol. 6, No. 2, pp. 64-72, June 2018. (DOI: 10.1109/MELE.2018.2816844)
- I. Moghaddas, A. Fouman, M. E. Salehi, and M. Kargahi, "Instruction-level NBTI Stress Estimation and its Application in Runtime Aging Prediction for Embedded Processors", *Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, Vol. 38, No. 8, pp. 1427-1437, 2019. (DOI: 10.1109/TCAD.2018.2846629)
- H. Faragardi, S. Dehnavi, T. Nolte, M. Kargahi, and Thomas Fahringer, "An energy-aware resource provisioning scheme for real-time applications in a cloud data center", in *John Wiley & Sons Software: Practice and Experience*, Vol. 48, No. 10, 2018. (DOI: doi.org/10.1002/spe.2592)
- S. Asyaban and M. Kargahi, "Feasibility Interval for Fixed-Priority Scheduling of Mixed-Criticality Periodic Tasks with Offsets", *IEEE Embedded Systems Letters*, Vol. 11, No. 1, pp. 17-20, March 2019. (DOI: 10.1109/LES.2018.2828109)
- M. Hasanloo and M. Kargahi, "Harvesting-aware charge management in embedded systems equipped with a hybrid electrical energy storage", in *Elsevier Computers and Electrical Engineering*, Vol. 69, pp. 98-114, July 2018. (DOI: 10.1016/j.compeleceng.2018.05.021)
- S. Asyaban and M. Kargahi, "An Exact Schedulability Test for Fixed-Priority Pre-emptive Mixed-Criticality Real-Time Systems", in *Springer Real-Time Systems*, Vol. 54, No. 1, pp. 32-90, 2018. (DOI: 10.1007/s11241-017-9287-2)
- A. Ghaderzadeh, M. Kargahi, and Midia Reshadi, "ReDePoly: Reducing Delays in Multi-channel P2P Live Streaming Systems Using Distributed Intelligence", in *Springer Telecommunication Systems*, Vol. 67, No. 2, pp. 231-246, 2018. (DOI: 10.1007/s11235-017-0336-x)
- A. Ghaderzadeh, M. Kargahi, and Midia Reshadi, "DisTriB: Distributed Trust Management Model based on Gossip Learning and Bayesian Networks in Collaborative Computing Systems", in *Journal of Advances in Computer Research*, Vol. 8, No. 4, pp. 37-57, Nov. 2017.
- S. Kianpisheh, M. Kargahi, and N.M. Charkari, "Resource Availability Prediction in Distributed Systems: An Approach for Modeling Non-Stationary Transition Probabilities", in *the IEEE Transaction on Parallel and Distributed Systems (TPDS)*, Vol. 28, No. 8, pp. 2357-2372, Aug. 2017. (DOI: 10.1109/TPDS.2017.2659746)
- M. Gholipour, M. Kargahi, H. Faili, S. Youssefi, and H. Ravanbakhsh, "An Energy-Optimal Real-Time Scheduling Algorithm for Unrelated DVS-Enabled Parallel Machines", in *the CSI Journal on Computer Science and Engineering*, Vol. 13, No. 2, pp. 1-22, 2016.
- A. Ghaderzadeh, M. Kargahi, and Midia Reshadi, "InFreD: Intelligent Free Rider Detection in Collaborative Distributed Systems", in *the Journal of Network and Computer Applications, Academic Press*, Vol. 78, pp. 134-145, Jan. 2017. (DOI: 10.1016/j.jnca.2016.11.007)

- S. Asyaban, M. Kargahi, L. Thiele, and M. Mohaqeqi, "Analysis and Scheduling of a Battery-Less Mixed-Criticality System with Energy Uncertainty", in the *ACM Transactions on Embedded Computing Systems (TECS)*, Vol. 16, No. 1, Article 23: pp. 1-26, Oct. 2016. (DOI: [10.1145/2964201](https://doi.org/10.1145/2964201))
- S. Kianpisheh, N. Moghadam Charkari, and M. Kargahi, "Ant Colony Based Constrained Workflow Scheduling for Heterogeneous Computing Systems", in the *Springer Cluster Computing*, Vol. 19, No. 3, pp. 1053-1070, 2016. (DOI: [10.1007/s10586-016-0575-8](https://doi.org/10.1007/s10586-016-0575-8))
- S. Kianpisheh, N. Moghadam Charkari, and M. Kargahi, "Reliability-Driven Scheduling of Time/Cost-Constrained Grid Workflows ", in the *Elsevier Future Generation Computer Systems*, Vol. 55, pp. 1-16, Feb. 2016. (DOI: [10.1016/j.future.2015.07.014](https://doi.org/10.1016/j.future.2015.07.014))
- M. Mohaqeqi and M. Kargahi, "Thermal Analysis of Stochastic DVFS-Enabled Multicore Real-Time Systems", in the *Springer Supercomputing*, Vol 71, No. 12, pp. 4594-4622, 2015. (DOI: [10.1007/s11227-015-1562-1](https://doi.org/10.1007/s11227-015-1562-1))
- M. Mohaqeqi, M. Kargahi, and F. Gharehdaghi, "Temperature-Aware Speed Scheduling in Periodic Real-Time Systems", in the *CSI Journal on Computer Science and Engineering (CSI-JCSE)*, Vol. 12, No. 2 & 4 (b), pp. 36-46, 2014.
- M. Mohaqeqi and M. Kargahi, "Temperature-Aware Adaptive Power Management: An Analytical Approach for Joint Processor and Cooling Mode Selection", in the *Elsevier Sustainable Computing, Informatics and Systems*, Vol. 4, No. 4, pp. 307-317, Dec. 2014. (In Press-Available Online: Aug. 27, 2014) (DOI: [10.1016/j.suscom.2014.08.002](https://doi.org/10.1016/j.suscom.2014.08.002))
- S. Manoochchri and M. Kargahi, "Lifetime Improvement of Real-Time Embedded Systems by Battery-Aware Scheduling", in the *International Journal of Electrical and Computer Engineering (IJECE)*, Vol. 12, No. 1, pp. 25-36, Aug. 2014. (In Persian).
- M. Nasri and M. Kargahi, "Precautious-RM: A Predictable Non-Preemptive Scheduling Algorithm for Harmonic Tasks", in the *Springer Real-Time Systems*, Vol. 50, No. 4, pp. 548-584, July 2014. (DOI: [10.1007/s11241-014-9203-y](https://doi.org/10.1007/s11241-014-9203-y))
- M. Mohaqeqi, M. Kargahi, and A. Movaghar, "Analytical Leakage-Aware Thermal Modeling of a Real-Time System", in the *IEEE Transactions on Computers*, Vol. 63, No. 6, pp.1378-1392, June 2014. (DOI: [10.1109/TC.2013.237](https://doi.org/10.1109/TC.2013.237))
- M. Mohaqeqi, M. Kargahi, and M. Dehghan, "Adaptive Scheduling of Real-Time Systems co-Supplied by Renewable and Non-Renewable Sources", in the *ACM Transactions on Embedded Computing Systems (ACM TECS)*, Vol. 13, No. 1, Article 36:1-28, Nov. 2013. (DOI: [10.1145/2536747.2536758](https://doi.org/10.1145/2536747.2536758)).
- M. Kargahi and M. Dehghan, "Adaptive Scheduling of Energy Harvesting Real-Time Systems", in the *CSI Journal on Computer Science and Engineering (CSI-JCSE)*, Vol. 11, No. 1, pp. 1-10, Spring 2013. (In Persian).
- M. Mohaqeqi and M. Kargahi, "Utility Accrual Object Distribution in MPSoC Real-Time Embedded Systems," in the *Elsevier Journal of Computer and System Sciences*, Vol. 79, No. 4, pp. 406-420, Jun. 2013. (DOI: [10.1016/j.jcss.2012.09.003](https://doi.org/10.1016/j.jcss.2012.09.003))

- F. Eshragh and M. Kargahi, "Analytical Architecture-based Performability Evaluation of Real-Time Software Systems", in the *Elsevier Journal of Systems and Software*, Vol. 86, No. 1, pp. 233-246, Jan. 2013. (DOI: [10.1016/j.jss.2012.08.014](https://doi.org/10.1016/j.jss.2012.08.014))
- M. Nasri, M. Kargahi, M. Mohaqeqi, "Scheduling of Accuracy-Constrained Real-Time Systems in Dynamic Environments," in the *IEEE Embedded Systems Letters*. Vol. 4, No. 3, pp. 61-64, 2012. (DOI: [10.1109/LES.2012.2195294](https://doi.org/10.1109/LES.2012.2195294))
- M. Kargahi and A. Movaghar, "Performance Optimization Based on Analytical Modeling in a Real-Time System with Constrained Time/Utility Functions," in the *IEEE Transactions on Computers*. IEEE computer Society DL. IEEE Computer Society, Vol. 60, No. 8, pp. 1169-1181, Aug. 2011.
- M. Kargahi and A. Movaghar, "Utility Accrual Dynamic Routing in Real-Time Parallel Systems," in the *IEEE Transactions on Parallel and Distributed Systems*. IEEE computer Society DL. IEEE Computer Society, Vol. 21, No. 12, pp. 1822-1835, Dec. 2010.
- H. Karimi, M. Kargahi, N. Yazdani, "On the Handling of Node Failures: Energy-Efficient Job Allocation Algorithm for Real-time Sensor Networks", in the *Journal of Information Processing Systems*, Vol. 6, No. 3, pp. 413-434, Sep. 2010.
- M. Kargahi and A. Movaghar, "Dynamic Routing of Real-Time Jobs among Parallel EDF Queues: A Performance Study, " in the *Elsevier Journal of Computers and Electrical Engineering*, Vol. 36, No. 5, pp. 835-849, Sep. 2010.
- L. Farzinvas and M. Kargahi, "Energy-Aware Scheduling of Execution-Instant Sensitive Real-Time Systems", in the *CSI Journal on Computer Science and Engineering (CSI-JCSE)*, Vol. 7, No. 2 & 4 (b), pp. 34-47, 2009.
- M. Kargahi and A. Movaghar, "Stochastic DVS-based Dynamic Power Management for Soft Real-Time Systems," in the *Elsevier Journal of Microprocessors and Microsystems*, Vol. 32, No. 3, pp. 121-144, May 2008.
- M. Kargahi and A. Movaghar, "A Two-Class $M/M/1$ System with Preemptive Non Real-Time Jobs and Prioritized Real-Time Jobs under Earliest-Deadline-First policy", in *Scientia Iranica*, Vol. 15, No. 2, pp. 252-265, March-April 2008.
- M. Kargahi and A. Movaghar, "A Non-Preemptive Two-Class $M/M/1$ System with Prioritized Real-Time Jobs under Earliest-Deadline-First Policy", in the *Journal of Industrial and Systems Engineering*, Vol. 1, No. 3, pp. 260-280, Fall 2007.
- M. Kargahi and A. Movaghar, "A Multiprocessor System with Non-Preemptive Earliest Deadline First Scheduling Policy: A Performability Study, " in the *Journal of Industrial and Systems Engineering*, Vol. 1, No. 1, pp. 37-55, Spring 2007.
- M. Kargahi and A. Movaghar, "A Method for Performance Analysis of Earliest-Deadline-First Scheduling Policy," in the *Springer Journal of Supercomputing*, Vol. 37, No. 2, pp. 197-222, August 2006.

- **Conferences**

- V. Panahi and M. Kargahi, "Performance adaptation of real-time control tasks by dynamic scheduling: A self-triggered control approach", in *the International Symposium on Real-Time and Embedded Systems and Technologies (RTEST 2018)*, IEEE, pp. 80-87, May 2018.
- Hamid Reza Faragardi, Saeid Dehnavi, Mehdi Kargahi, Alessandro V Papadopoulos, Thomas Nolte, "A time-predictable fog-integrated cloud framework: One step forward in the deployment of a smart factory", in *the International Symposium on Real-Time and Embedded Systems and Technologies (RTEST 2018)*, IEEE, pp. 54-62, May 2018.
- M. Shirazi, M. Kargahi, and L. Thiele, "Resilient Scheduling of Energy-Variable Weakly-Hard Real-Time Systems", in *Proceedings of the 25th Real-Time Networks and Systems (RTNS 2017)*, ACM, pp. 297-306, Oct. 2017. (DOI: 10.1145/3139258.3139282)
- Mohaqeqi, M. Kargahi, and Kazim Fouladi, "Stochastic Thermal Control of a Multicore Real-Time System", in *the 24th Euromicro International Conference on Parallel, Distributed, and Network-Based Processing (PDP 2016)*, pp. 208-215, Feb. 2016. (DOI: [10.1109/PDP.2016.44](https://doi.org/10.1109/PDP.2016.44))
- M. Ghassemi, M. Mohaqeqi, and M. Kargahi, "Joint Management of Processing and Cooling Power Based on Inaccurate Thermal Information in a Stochastic Real-Time System", in *the 23rd Conference on Real-Time Networks and Systems (RTNS 2015)*, ACM, Nov. 4-6, pp. 45-54.
- Khadijeh Faramarzi, Mahmood Hasanloo, and Mehdi Kargahi, "The PFP_ASAP Algorithm for Energy Harvesting Real-Time Systems with a Non-Ideal Supercapacitor", in *the 5th International Conference on Computer and Knowledge Engineering (ICCKE 2015)*, pp. 279-284, 2015. (DOI: [10.1109/ICCKE.2015.7365842](https://doi.org/10.1109/ICCKE.2015.7365842))
- Javad Ebrahimiyan Amiri and Mehdi Kargahi, "A Predictable Interrupt Management Policy for Real-Time Operating Systems," in *the International Conference on Real-Time and Embedded Systems and Technologies (RTEST 2015)*, pp. 1-8, Oct. 2015. (DOI: [10.1109/RTEST.2015.7369843](https://doi.org/10.1109/RTEST.2015.7369843))
- Alireza Salami and Mehdi Kargahi, "Energy-Efficient Scheduling for Stability-Guaranteed Embedded Control Systems," in *the International Conference on Real-Time and Embedded Systems and Technologies (RTEST 2015)*, pp. 1-8, Oct. 2015. (DOI: [10.1109/RTEST.2015.7369848](https://doi.org/10.1109/RTEST.2015.7369848))
- Ahad Mozafari Fard, Mehdi Ghasemi, and Mehdi Kargahi, "Reliability-Constrained Response-Time Minimization in Soft Real-Time Systems," in *the International Conference on Real-Time and Embedded Systems and Technologies (RTEST 2015)*, pp. 1-8, Oct. 2015. (DOI: [10.1109/RTEST.2015.7369850](https://doi.org/10.1109/RTEST.2015.7369850))
- M. Shirazi, M. Kargahi, F. Khunjush, "Gauss-Jordan Matrix Inversion Speed-Up using GPUs with the Consideration of Power Consumption", in *the 5th International Conference on Advanced Communications and Computation (INFOCOMP 2015)*, pp. 20-26, IARIA, June 2015.
- V. Panahi, M. Mohaqeqi, and M. Kargahi, "Preemption-Delay Aware Self-Triggered Controller: A Scheduler-Controller Codesign Approach", in *the 23rd Iranian Conference on Electrical Engineering (ICEE 2015)*, pp. 711-716, IEEE 2015. (DOI: [10.1109/IranianCEE.2015.7146306](https://doi.org/10.1109/IranianCEE.2015.7146306)) **(Best Paper Award)**
- M. Tavakkoli and M. Kargahi, "An Algorithm for Cloud Provider Benefit Maximization regarding SLA Availability Constraints", in *CSICC 2015*, pp. 723-728, March 2015. (In Persian)
- Hanif Maleki, M. Kargahi, and Sam Jabbehdari, "RTLb-DSR: A load-balancing DSR based QoS routing protocol in MANETs", in *the 4th International Conference on Computer and Knowledge Engineering (ICCKE 2014)*, pp. 728-735, Oct. 29-30, 2014.
- Z. Abbasi, M. Kargahi, M. Mohaqeqi, "Anomaly detection in embedded systems using simultaneous power and temperature monitoring", in *the 11th ISC Conference on Information Security and Cryptography (ISCISC 2014)*, pp. 115-119, IEEE, Sep. 3-4, 2014. **(Best Paper Award)**

- M. Nasri, S. Baruah, G. Fohler, and M. Kargahi, "On the Optimality of RM and EDF for Non-Preemptive Real-Time Harmonic Tasks", in the *22nd International Conference on Real-Time and Network Systems (RTNS 2014)*, pp. 331-330, ACM, Oct. 8-10, 2014.
- M. Tavakkoli and M. Kargahi, "Workload Prediction for Cloud Computing Availability Improvement", in *International Conference on Information and Knowledge Technology (IKT 2014)*, pp. 1-7, May 28-30, 2014. (In Persian)
- M. Nasri, G. Fohler, and M. Kargahi, "A Framework to Construct Customized Harmonic Periods for Real-Time Systems", in the *26th Euromicro Conference on Real-Time Systems (ECRTS 2014)*, pp. 211-220, IEEE, July 8-11, 2014.
- M. Mohaqeqi and M. Kargahi, "Thermal Analysis of Periodic Real-Time Systems with Stochastic Properties: An Analytical Approach", in the *21st International Conference on Real-Time and Network Systems (RTNS 2013)*, pp. 119-127, ACM, Oct. 16-18, 2013.
- M. Mohaqeqi, M. Kargahi, A. Movaghar, "Analytical Leakage/ Temperature-Aware Power Modeling and Optimization for a Variable Speed Real-Time System", in the *20th International Conference on Real-Time and Network Systems (RTNS 2012)*, pp. 81-90, ACM, Nov. 8-9, 2012.
- M. Nasri and M. Kargahi, "A Method for Improving Delay-Sensitive Accuracy in Real-Time Embedded Systems", in the *18th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA 2012)*, pp. 378-387, Aug. 20-22, 2012.
- P. Teymoori, M. Kargahi, N. Yazdani, "A Real-Time Data Aggregation Method for Fault-Tolerant Wireless Sensor Networks", in the *Proceedings of 27th ACM International Symposium on Applied Computing (ACM SAC 2012)*, pp. 1176-1183, Mar. 2012.
- M. Mohaqeqi and M. Kargahi, "Utility Accrual Object Distribution in Real-Time Systems", in the *Proceedings of the 16th IEEE International Conference on Parallel and Distributed Systems (ICPADS 2010)*, pp. 347-354, Dec. 8-10, 2010.
- M. Dehghan and M. Kargahi, "Adaptive Checkpoint Placement in Energy Harvesting Real-Time Systems", in the *18th International Conference on Electrical Engineering (ICEE 2010)*, pp. 932-937, July 08-10, 2010.
- A. Pourhaji-Kazem, N. Dadashkhani, M. Kargahi, H. Habibi-Aghdam, "A Simulated Annealing Approach for Maximizing the Accrued Utility of an Isochronal Soft Real-Time System", in the *2nd International Conference on Environmental and Computer Science (ICECS 2009)*, pp. 191-195, 2009.
- H. Karimi, M. Kargahi, N. Yazdani, "Energy-Efficient Cluster-Based Scheme for Handling Node Failure in Real-Time Sensor Networks", in the *8th IEEE International Symposium on Dependable, Autonomic and Secure Computing (DASC 2009)*, pp. 143-148, Dec. 12-14, 2009.
- H. Karimi, M. Kargahi, N. Yazdani, "On the Handling Node Failure: Energy-Efficient Job Allocation Algorithm for Real-time Sensor Networks", in the *4th IEEE International Conference on Embedded and Multimedia Computing (EM-COM 2009)*, pp. 56-61, 2009.
- L. Farzinwash, M. Kargahi, "A Scheduling Algorithm for Execution-Instant Sensitive Real-Time Systems", in the *15th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA 2009)*, pp. 511-518, Aug. 24-26, 2009.
- M. Kargahi, M. Bazrafshan, "Guaranteeing Utility Level of a Firm Real-Time System Using Control Theory", in the *14th International CSI Computer Conference (CSICC 2009)*, IEEE CS, Oct. 20-21, pp. 692-697, 2009.
- A. Pourhaji-Kazem, H. Seifzadeh, M. Kargahi, A. Movaghar, Shahriar Lotfi, "Maximizing the Accrued Utility of an Isochronal Soft Real-Time System Using Genetic Algorithms", in the *8th IEEE/ACIS International Conference on Computer and Information Science (ICIS 2009)*, pp. 65-69, June 1-3, 2009.

- H. Seifzadeh, A. Pourhaji-Kazem, M. Kargahi, A. Movaghar, "A Method for Dynamic Software Updating in Real-Time Systems ", *in the 8th IEEE/ACIS International Conference on Computer and Information Science (ICIS 2009)*, pp. 34-38, June 1-3, 2009.
- H. Hajabdolali, M. Kargahi, N. Yazdani, "An Efficient Distributed Flow Scheduling for Improving the Internet Bandwidth Usage", *in the 14th National CSI Computer Conference (CS-ICC 2009)*. (In Persian).
- F. Varaminian, M. Kargahi, "Program Execution-Time Estimation in Soft Real-Time Systems using Loop-Counter Predictors", *in the 14th National CSI Computer Conference (CSICC 2009)*. (In Persian).
- M. Kargahi and A. Movaghar, "Dynamic Routing of Real-Time Jobs among Parallel EDF Queues: A Performance Study, " *in the Proceedings of the 11th Annual Int. CSI Computer Conference*, Tehran, Iran, pp. 385-392, January 24-26, 2006.
- M. Kargahi and A. Movaghar, "Non-Preemptive Earliest-Deadline-First Scheduling Policy: A Performance Study", *in the Proceedings of the 13th Annual Meeting of the IEEE International Symposium on Modeling, Analysis, and Simulation of Computer and Telecommunication Systems (MASCOTS)*, Atlanta, Georgia, USA, pp. 201-210, September 27-29, 2005.
- M. Kargahi and A. Movaghar, "A Stochastic DVS-Based Dynamic Power Management for Soft Real-Time Systems", *in the Proceedings of the IEEE International Conference on Wireless Networks, Communications and Mobile Computing (Wirelesscom/MobiWac 2005)*, Maui, Hawaii, USA, pp. 63-68, June 13-16, 2005.
- M. Kargahi and A. Movaghar, "A Method for Performance Analysis of Earliest-Deadline-First Scheduling Policy", *in the Proceedings of the IEEE International Conference on Dependable Systems and Networks (DSN-2004)*, Florence, Italy, pp. 826-834, June 28th – July 1, 2004.
- M. Kargahi and A. Movaghar, "Performance Analysis of a Dynamic Routing in Real-Time Parallel Queues", *in the Proceedings of 10th Annual Int. CSI Computer Conference*, Tehran, Iran, pp. 560-569, February 2005 (in Persian).
- M. Kargahi and A. Movaghar, "A New Approach for Performance Analysis of Earliest-Deadline-First Scheduling Policy", *in the Proceedings of 9th Annual Int. CSI Computer Conference*, Tehran, Iran, pp. 303-310, February 2004 (in Persian).
- M. Kargahi, "The Capabilities of Operating Systems for Accomplishment of Missions in Real-Time and Embedded Systems-A Survey", *in the Operating System and Security Conference (OSSC'2003)*, Tehran, Iran, pp. 18-32, 2003. (In Persian).

9. Supervised Thesis/Researches

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