Mohammad Hadi

Curriculum Vitae

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BRIEF BIOGRAPHY

I received my B.Sc. degree as a top-ranking graduate from Isfahan University of Technology in 2011, and obtained my M.Sc. and Ph.D. degrees with honors from Sharif University of Technology in 2013 and 2018, respectively. I was with Chalmers University of Technology as a postdoctoral researcher during 2019. Currently, I'm an assistant professor at Sharif University of technology. As reflected in my published journal papers, I'm interested in the applications of new concepts such as artificial intelligence, software-defined networking, dynamic resource allocation, and network virtualization in various networking platforms such as optical and radio networks. Since 2010, I have engaged in several research and development projects, where I gained a lot of practical engineering experiences such as developing Linux-based software applications, real-time embedded system design, FPGA programming, and fast numerical optimization. I have been a member of the Optical/Data Networks Research Laboratory, Sharif University of Technology, and Fiber Optic Communications Research Center, Chalmers University of Technology.

EXPERIENCE

2021 – CURRENT **Assistant Professor**
Communication Systems
Sharif University of Technology

2020 – 2021 **Postdoc Researcher**
Optical Communication Networks
Sharif University of Technology

2020 **Postdoc Researcher**
Optical Communication Systems
K. N. Toosi University of Technology

2019-2020 **Postdoc Researcher**
Optical Communication Networks
Chalmers University of Technology

EDUCATION

2013 – 2018 **Doctor of Philosophy**
GPA 18.70/20, FIRST CLASS HONORS
Optical Communication Systems
Sharif University of Technology

2011–2013 **Master of Science**
GPA 18.75/20, FIRST CLASS HONORS
Optical Communication Systems
Sharif University of Technology

2008 – 2011 **Bachelor of Science**
GPA 19.11/20, RANKED 1ST AMONG 144 STUDENTS
Communication Systems
Isfahan University of Technology

AWARDS

2020, 2023 **Research Grant**
Iranian National Elites Foundation

2019 **Outstanding P.h.D. Thesis**
IEEE Iran Section

2018 **Outstanding P.h.D. Researcher**
Sharif University of Technology

2015-2017 **Ph.D. Research Assistant**
Iranian National Elites Foundation

2014 **Ph.D. Teaching Assistant**
Iranian National Elites Foundation

2011-2013 **M.Sc. Scholarship**
Sharif University of Technology

2009-2011 **B.Sc. Scholarship Award**
Isfahan University of Technology

2008-2011 **Top-Ranked Student Award**
Isfahan University of Technology

HONORS

2008-2011 **B.Sc. Student Ranking**
Ranked 1st Among 144 Undergraduate Students
Isfahan University of Technology

2011-2013 **M.Sc. Student Ranking**
Ranked 6th Among 44 M.Sc. Graduate Students
Sharif University of Technology

2013 **Ph.D. Entrance Exam Ranking**
Ranked 4th Among All 1093 Participants
Nationwide University Entrance Exam

2013-2018 **Ph.D. Student Ranking**
Ranked 5th Among 38 Ph.D. Graduate Students
Sharif University of Technology

2013-2018 **Elites Foundation Membership**
Iranian National Elites Foundation

JOURNAL PUBLICATIONS

[1] M. Ahmadi, **M. Hadi**, M. R. Pakravan, Power-Efficient Joint Dynamic Resource Allocation in Virtualized Inter-Data Center Elastic Optical Networks, *IEEE Access*, vol. 12, pp. 75599 - 75609, May 2024.

[2] M. H. Shokuhi, **M. Hadi**, M. R. Pakravan, Mobility-Aware Computation Offloading for Hierarchical Mobile Edge Computing, *IEEE Transactions on Network and Service Management*, vol. 21, no. 3, pp. 3372 - 3384, Jun. 2024.

Last update: December 15, 2024.

[3] **M. Hadi**, M. M. Mojahedian, M. R. Pakravan, M. R. Aref, Strategies for Optimal Transmission and Delay Reduction in Dynamic Index Coding Problem, *EEE Transactions on Communications*, vol. 71, no. 8, pp. 4694 - 4706, May 2023.

[4] F. S. Vajd, **M. Hadi**, C. Bhar, M. R. Pakravan, E. Agrell, Dynamic Joint Functional Split and Resource Allocation Optimization in Elastic Optical Fronthaul, *IEEE Transactions on Network and Service Management*, vol. 19, no. 4, pp. 4505 - 4515, Dec. 2022.

[5] **M. Hadi**, C. Bhar, E. Agrell, A General QoS-Aware Scheduling Procedure for Passive Optical Networks, submitted to *OSA / IEEE Journal of Optical Communications and Networking*, vol. 12, no. 7, pp. 217 – 226, Jul. 2020.

[6] **M. Hadi**, E. Agrell, Joint Power-Efficient Traffic Shaping and Service Provisioning for Metro Elastic Optical Networks, *OSA / IEEE Journal of Optical Communications and Networking*, vol. 11, no. 12, pp. 578 – 587, Dec. 2019.

[7] **M. Hadi**, M. R. Pakravan, E. Agrell, Dynamic Resource Allocation in Metro Elastic Optical Networks Using Lyapunov Drift Optimization, *OSA / IEEE Journal of Optical Communications and Networking*, vol. 11, no. 6, pp. 250 – 259, Jun. 2019.

[8] **M. Hadi**, M. R. Pakravan, Energy-Efficient Service Provisioning in Inter-Data Center Elastic Optical Networks, *IEEE Transactions on Green Communications and Networking*, vol. 3, no. 1, pp. 180 – 191, Mar. 2019.

[9] **M. Hadi**, M. R. Pakravan, Energy-Efficient Transponder Configuration for Few-Mode Fiber-based Elastic Optical Networks, *IEEE Communications Letters*, vol. 22, no. 5, pp. 970 – 973, May 2018.

[10] **M. Hadi**, M. R. Pakravan, Rate-Maximized Scheduling in Adaptive OCDMA Systems using Stochastic Optimization, *IEEE Communications Letters*, vol. 22, no. 4, pp. 728 – 731, Apr. 2018.

[11] **M. Hadi**, M. R. Pakravan, Energy-Efficient Fast Configuration of Flexible Transponders and Grooming Switches in OFDM-Based Elastic Optical Networks, *OSA / IEEE Journal of Optical Communications and Networking*, vol. 10, no. 2, pp. 90-103, Feb. 2018.

[12] **M. Hadi**, M. R. Pakravan, Resource Allocation for Elastic Optical Networks using Geometric Optimization, *OSA / IEEE Journal of Optical Communications and Networking*, vol. 9, no. 10, pp. 889-899, Oct. 2017.

[13] **M. Hadi**, M. R. Pakravan, Analysis and Design of Adaptive OCDMA Passive Optical Networks, *IEEE / OSA Journal of Lightwave Technology*, vol. 35, no. 14, pp. 2853 – 2863, Jul. 2017.

[14] **M. Hadi**, F. Marvasti, M. R. Pakravan, Dispersion Compensation using High-Positive Dispersive Optical Fibers, *Chinese Optics Letters*, vol. 15, no. 3, Mar. 2017.

[15] **M. Hadi**, M. R. Pakravan, Spectrum-Convertible BVWXC Placement in OFDM-Based Elastic Optical Networks, *IEEE Photonics Journal*, vol. 9, no. 1, pp. 1-12, Feb. 2017.

CONFERENCE PUBLICATIONS

[1] S. Razavi, **M. Hadi**, M. R. Pakravan, End-to-end Performance for User-centric Cell-free mMIMO Networks with Multiple CPUs, *International Symposium on Telecommunications (IST)*, Oct. 2024, IEEE.

[2] M. H. Zarei, **M. Hadi**, M. R. Pakravan, Graph Signal Processing Meets Optical Resource Allocation , *International Symposium on Telecommunications (IST)*, Oct. 2024, IEEE.

[3] M. H. Keshavarz, **M. Hadi**, M. Lashgari, M. R. Pakravan, P. Monti, Optimal QoS-Aware Allocation of Virtual Network Resources to Mixed Mobile-Optical Network Slices, *Global Communications Conference (GLOBECOM)*, Dec. 2021, IEEE.

[4] **M. Hadi**, E. Agrell, Iterative Configuration in Elastic Optical Networks, *International Conference on Optical Network Design and Modeling (ONDM)*, May 2020.

[5] **M. Hadi**, M. M. Mojahedian, M. R. Aref, M. R. Pakravan, Time-Sharing Improves Dynamic Index Coding Delay, *Iran Workshop on Communication and Information Theory (IWCIT)*, Apr. 2019, IEEE.

[6] **M. Hadi**, M. R. Pakravan, M. M. Razavi, An Efficient Real-time Voice Activity Detection Algorithm using Teager Energy to Energy Ratio, *Iranian Conference on Electrical Engineering (ICEE)*, May 2019, IEEE.

[7] **M. Hadi**, M. R. Pakravan, Improved Routing and Spectrum Assignment Formulations for Optical OFDM Networks, *International Symposium on Telecommunications (IST)*, Sep. 2017, IEEE.

[8] **M. Hadi**, M. M. Mojahedian, M. R. Aref, Dynamic Index Coding Gain over a Complete Bi-directional Side Information Graph, *Iran Workshop on Communication and Information Theory (IWCIT)*, May 2016, IEEE.

[9] **M. Hadi**, M. M. Jahromi, H. R. Rezaiy, Rainbow Table TMTO Attack Optimization Considering Online Sequential Search Time, *International Congress on Technology, Communication, and Knowledge (ICTCK)*, Nov. 2014, IEEE.

[10] **M. Hadi**, M. R. Pakravan, Adaptive Level Control to Improve QoS in OCDMA Local Area Networks, *Iranian Conference on Electrical Engineering (ICEE)*, May 2013, IEEE.

IN-PROGRESS PUBLICATIONS

[1] **M. Hadi**, E. Agrell, L. Wosinska, Power-Efficient Service-Differentiated Jitter Control in Metro Elastic Optical Networks.

[2] **M. Hadi**, E. Agrell, M. Farsi, Stochastic Analysis of Power-Efficient Elastic Point-to-point Optical Lightpath.

[3] C. Bhar, E. Agrell, **M. Hadi**, T. Svensson, QoS-Aware Video Delivery in Cell-Free Networks.

THESES

Ph.D. Thesis

Resource Allocation Management in Elastic Optical Networks, Supervised by Dr. M. R. Pakravan

M.Sc. Thesis

Quality of Service Improvement in Optical CDMA Networks, Supervised by Dr. M. R. Pakravan

B.Sc. Thesis

Structural Improvements in Single Phase Double Speed Induction Motors, Supervised by Dr. M. R. Ahmadzadeh

PATENT

M. Hadi, Electronic Speed Selector Switch for Induction Motors, *Iran Intellectual Property Office*, Registration No. 78188, 2013.

LANGUAGE SKILLS

NATIVE	Persian
FLUENT	English
FAMILIAR	Arabic

COMPUTER SKILLS

BEGINNER	ADS, HFSS, QT, NS2, NS3, Vivado
INTERMEDIATE	OPNET, Altium Designer, ModelSim, Code::Blocks, OrCAD PSpice, PyCharm
EXPERT	Linux, Windows, LaTeX, Microsoft Office, Eclipse, Microsoft Visual Studio, ISE Mathcad, MATLAB, YALMIP Gurobi, CPLEX, CVX

PROGRAMMING SKILLS

BEGINNER	Java, C#
INTERMEDIATE	Python, Batch Script
EXPERT	C, C++, Verilog, VHDL, Shell Script

SELECTED PRESENTATIONS

Optical Networks: Technology and Research Trends, *International Symposium on Telecommunications (IST)*, 2024.

Explorable Resources for Communication Forecasting, *Sharif University of Technology*, 2022.

Deep Space Communication, *Sharif University of Technology*, 2021.

An Introduction to Optical Communication Networks, *Sharif University of Technology*, 2020.

Elastic Optical Networks, *Sharif University of Technology*, 2020.

Resource Allocation, A ubiquitous concept with different terminologies, *Chalmers University of Technology*, 2019.

Scopes for Energy-Efficiency in Optical Distribution Networks, *Chalmers University of Technology*, 2019.

Routing and Spectrum Assignment in Elastic Optical Networks, *Sharif University of Technology*, 2017.

Software-Defined Elastic Optical Networks, *Sharif University of Technology*, 2017.

Optical OFDM Networks, *Sharif University of Technology*, 2016.

Hopfield Neural Networks, *Sharif University of Technology*, 2015.

A Review of Automatically Switched Optical Networks, *Sharif University of Technology*, 2014.

Self-Organized Networks, *Sharif University of Technology*, 2013.

How Can We Make a Simple Physical Model?, *Information and Communication Technology Institute*, 2012.

TEACHING EXPERIENCES

2020-CURRENT	**Teacher** Electrical Circuits Circuit Theory Communication Systems Statistical Optical Communications Optical Communication Networks Introduction to Electrical Engineering *Sharif University of Technology*
2019-2020	**Teacher** Engineering Circuit Analysis Ordinary Differential Equations Filter Synthesis and Design Communication Systems Principles *K. N. Toosi University of Technology*
2013-2017	**Teacher Assistant** Data Communication Networks *Sharif University of Technology*

REFERENCES

Dr. Erik Agrell

POSITION	Professor
AFFILIATION	Electrical Engineering Department *Chalmers University of Technology*
PHONE	+46 (31) 772 1762
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Dr. Mohammad R. Pakravan

POSITION	Associate Professor
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Dr. Jawad A. Salehi

POSITION	Professor
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Dr. Farokh A. Marvasti

POSITION	Professor
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