

In the Name of God

Curriculum Vitae

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<https://scholar.google.com/citations?user=VW3QqcwAAAAJ&hl=en>

Previous Affiliation:

Dept. of Computer Engineering Artificial Intelligence and Robotics, Center of Excellence on Soft Computing and Intelligent Information Processing (SCIIP), FUM Center of Advanced Rehabilitation and Robotics Research (FUMCARE), Ferdowsi University of Mashhad, Mashhad (FUM), Iran

Education:

- **Postdoctoral Fellow, Computer Engineering Artificial Intelligence and Robotics**
Postdoc Advisor: Prof. Mohammad –R. Akbarzadeh –T. (Ferdowsi University of Mashhad)
- **Doctor of Philosophy, Computer Engineering Artificial Intelligence and Robotics**
Dissertation Title: Cognitive Swarm Nano Intelligence Approach with Biomimicry in Complex Systems for Medical Applications. (Grade:19.90)
Professor Advisor: Prof. Mohammad –R. Akbarzadeh –T. (Ferdowsi University of Mashhad)
Professor Co-advisor: Prof. Saeed Setayeshi (Amirkabir University)
- **Masters of Science, Computer Engineering-Artificial Intelligence**
Thesis Title: Bio-inspired Nanonetworks with Local Fuzzy Vision for Targeted Cancer Drug Delivery. (Grade:20)
Professor Advisor: Prof. Mohammad –R. Akbarzadeh –T. (Ferdowsi University of Mashhad)
Professor Co-advisor: Prof. Mohsen Tafaghodi (Mashhad University of Medical Sciences)
- **Bachelor of Science, Computer Engineering-Software Engineering**
- **Bachelor of Science, English Literature**

Research Interests:

Artificial Intelligence (AI), AI in Medicine, Complex Systems, Biomimicry and Bioinspiration, Cognitive Sciences, Swarm Intelligence, Nanomedicine, Early detection of disease, Targeted Delivery Systems, Swarm Nano Robotics, Cancer Research, Soft Computing and Computational Intelligence (Fuzzy Logic and control, Neural networks and deep learning, Machine Learning, Optimization Algorithms, Reinforcement Learning), Swarm Control, Systems of Systems, Multiagent Systems, Intelligent Control, Distributed AI and Decision-making, Computational Cellular/Molecular Biology, Stem Cell, Biomarkers Discovery, Biophysics, Protein Folding.

Experience:

- Assistant Professor, Department of Artificial Intelligence in Medicine, Faculty of Advanced Technologies in Medicine, Iran University of Medical Sciences, Tehran, Iran. (2023-Present)
 - Designing new courses on “Artificial Intelligence in Medicine”.
 - Designing Syllabus for new courses
 - Introduction to Artificial Intelligence in Medicine
 - Technical English for Artificial Intelligence in Medicine
 - Fuzzy Logic and Control in Medicine (Basic)
 - Fuzzy Logic and Control in Medicine (Advanced)
 - Introduction to Medical Robotics
 - Consulting/Advising/Project Managing/Reviewing of Artificial Intelligence in Medicine research projects.
 - Performing lectures/Morning Reports/Journal Club/workshops on Artificial Intelligence in Medicine at Iran University of Medical Sciences, Firozgar and Rasoul Akram Hospitals.
 - Vice President for Academic Affairs of Artificial Intelligence in the Medicine Department
- Post-Doctoral Fellow in Artificial Intelligence and Robotics at the Center of Excellence on Soft Computing and Intelligent Information Processing (SCIIP), Ferdowsi University of Mashhad.
- Research Assistance and teaching assistant at the Dept. of Computer Engineering Artificial Intelligence and Robotics, Center of Excellence on Soft Computing and Intelligent Information Processing (SCIIP), Ferdowsi University of Mashhad.
- Executive Director and Website Manager of the Center of Excellence on Soft Computing and Intelligent Information Processing (SCIIP), Ferdowsi University of Mashhad.
- Performing research projects and journal papers writing with FUM Center of Advanced Rehabilitation and Robotics Research (FUMCARE), Ferdowsi University of Mashhad, Iran.
- English Website Manager of Ferdowsi University of Mashhad (updating, maintenance, English translation of the News, Computer Graphical Design, English Podcast preparation), Office of the President, Public Relations, Ferdowsi University of Mashhad.
- Programing and designing and website manager and university lecturer, Bahar Institute of Higher Education.
- Web site Manager, Universities and High Schools.
- Translating, Simultaneous translating (English to Persian and Persian to English), and book editing.
- Research project/journal/book reviews.

Awards:

- Iran's National Elites Foundation PostDoc Award, 2021.
- Selected applied dissertation (in the field of medicine), Ferdowsi University of Mashhad, 2022.
- Cognitive science and technologies council's Research Grant, 2022.
- Ferdowsi University of Mashhad PostDoc Grant, 2021.
- Cognitive science and technologies council's Research Grant, 2021.
- First research cluster and talented students, Ferdowsi University of Mashhad, 2020.
- Best reviewer award, Joint Congress on Computational Intelligence, Ferdowsi University of Mashhad, 2020.

- Honorable Mentioned Paper Award Certificate, Joint Congress on Computational Intelligence, Ferdowsi University of Mashhad, 2020.
- First research cluster and talented students, Ferdowsi University of Mashhad, 2019.
- Iran National Science Foundation Research Grant, 2019.
- Cognitive science and technologies council's Research Grant, 2019.
- First research cluster and talented students, Ferdowsi University of Mashhad, 2018.
- First research cluster and talented students, Ferdowsi University of Mashhad, 2017.
- Cognitive science and technologies council's Research Grant, 2017.
- Outstanding student education award by Iran National Elites Foundation, 2017.
- First research cluster, Ferdowsi University of Mashhad, 2016.
- Nanotechnology Research Grant, 2015.
- Ranked 25th among 1015 participants in the National Entrance Exam for PhD program in Artificial Intelligence, 2015.
- Ranked 1st among the graduate students.
- Ranked 1st in the national employment test of the Power Company.
- Simultaneous education of two fields of study (Software engineering and English Literature).
- Ranked 24th among 200000 participants in the National Entrance Exam for BSc. program in English.

Journal Papers:

- Nasibeh Rady Raz, M.R. Akbarzadeh –T., Saeed Setayeshi "Influence-Based Nano Fuzzy Swarm Oxygen Deficiency Detection and Therapy," in *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, doi: 10.1109/TSMC.2023.3252899.
- Nasibeh Rady Raz, M.R. Akbarzadeh –T., " Target Convergence Analysis of Cancer Inspired Swarms for Early Disease Diagnosis and Targeted Collective Therapy," in *IEEE Transactions on Neural Networks and Learning Systems*, vol. 33, no. 5, pp. 2132-2146, May 2022.
- Nasibeh Rady Raz, Mohammad-R. Akbarzadeh-T., Alireza Akbarzadeh, "Experiment-based affect heuristic using fuzzy rules and Taguchi statistical method for tuning complex systems," *Expert Systems with Applications*, Vol. 172, 2021.
- Nasibeh Rady Raz, M.R. Akbarzadeh –T., "Swarm-Fuzzy Rule-Based Targeted Nano Delivery Using Bioinspired Nanomachines," in *IEEE Transactions on NanoBioscience*, vol. 18, no. 3, pp. 404-414, July 2019.
- Nasibeh Rady Raz, M.R. Akbarzadeh –T., M. Tafaghodi, "Bio-Inspired Nanonetworks for Targeted Cancer Drug Delivery," *IEEE Transactions on NanoBioscience*, Vol.14, No.8, pp. 894-906, Dec. 2015.
- Nasibeh Rady Raz, Saeed Setayeshi, "The power of cognitive science in overcoming cancer and chemo brain: A collaborative personalized therapy," *Journal of Cellular Immunotherapy*, Vol. 1, Num. 1–2, pp. 28-29, Dec. 2015.
- Submitted and under reviewing Journal Papers: 10

Conference Papers:

- Nasibeh Rady Raz and M.-R. Akbarzadeh-T., “Brain Delivery Systems Based on Artificial Intelligence and Biomimicry,” *The basic and clinical neuroscience congress (BCNC)*, Tehran, Iran, 13-14 Feb. 2023.
- Nasibeh Rady Raz and Mohammad Taghi Joghataei, “Artificial Intelligence for Brain Communication with Artificial Neurons: A New Brain-Machine Interfaces,” *The basic and clinical neuroscience congress (BCNC)*, Tehran, Iran, 13-14 Feb. 2023.
- Nasibeh Rady Raz and M.-R. Akbarzadeh-T., “Trust-based Cognitive Decision Making by Social Things-A Case Study of Cancer Treatment,” 2021 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE), Luxembourg, Luxembourg, 11-14 July 2021.
- Nasibeh Rady Raz and M.-R. Akbarzadeh-T. Saeed Setayeshi, “Biosensors Localization for Swarm Medical Delivery,” *2020 4th Conference on Swarm Intelligence and Evolutionary Computation (CSIEC), Mashhad, Iran, March 4-6, 2020*.
- Nasibeh Rady Raz and M.-R. Akbarzadeh-T., “Autonomous Energy Harvesting in Swarm of Biosensors for Precision Medicine,” *7th Iranian Joint Congress on Fuzzy and Intelligent Systems*, IEEE, University of Bojnord, Bojnord, Iran, 29-31 Jan. 2019.
- Nasibeh Rady Raz and M.-R. Akbarzadeh-T., “Autonomous Navigation of Nanomachines through Biological Motion Planning,” *6th International Conference on Robotics and Mechatronics (ICRoM’18)*, IEEE, Iran University of Science and Technology, Tehran, Iran, 23 October, 2018.
- Nasibeh Rady Raz and M.-R. Akbarzadeh-T., “Targeted Delivery of Medicinal Products in Advanced Therapy using Cellular Knowledge Seeding,” *Royan International Congress, 14th Congress on Stem Cell Biology and Technology*, Tehran, Iran, 29-31 August, 2018.
- Nasibeh Rady Raz, M.-R. Akbarzadeh-T., and, Saeed Setayeshi “Advanced Therapy and Cognitive Science: Structure and Infrastructure for having Effective Collaborative Therapy,” *Royan International Congress, 14th Congress on Stem Cell Biology and Technology*, Tehran, Iran, 29-31 August, 2018.
- Nasibeh Rady Raz and M.-R. Akbarzadeh-T., “Cognitive Knowledge Seeding with Collective Uncertainty Shaping,” *7thWorld Conference of Soft Computing (7thWConSC’18)*, Baku, Azerbaijan, May 29-31, 2018.
- Nasibeh Rady Raz and M.-R. Akbarzadeh-T., “Exosome Nano Exchanging Carriers for Cellular Trading: A Decision Knowledge Microenvironment Approach,” *Royan International Congress, 13th Congress on Stem Cell Biology and Technology*, Tehran, Iran, August 30- September 1, 2017.
- Nasibeh Rady Raz and M.-R. Akbarzadeh-T., “Swarm Fuzzy-Reinforcement Coordination using Bloom's Taxonomy of the Cognitive Domain” in *Proceedings of the Joint 17th World Congress of International Fuzzy Systems Association and 9th International Conference on Soft Computing and Intelligent Systems*, Otsu, Japan, June 27-30 2017.
- Nasibeh Rady Raz and M.-R. Akbarzadeh-T., “Engineered Cell Migration toward Targeted Drug Delivery using Cells Society’s Communicative Language” in *Proceedings of the 2nd Stem Cells and Regenerative Medicine International Congress*, Mashhad, Iran, April 19-21, 2017.

- Nasibeh Rady Raz and M.-R. Akbarzadeh-T., “Fuzzy-CA Model for an In-silico Cancer Cell Line: A Journey from Simple Cellular Pattern to an Emergent Complex Behavior” in Proceedings of IEEE International Conference on Fuzzy Systems, Vancouver, Canada, July 24-29, 2016.
- Nasibeh Rady Raz and M.-R. Akbarzadeh-T., “Stem Cells Maneuver to the Cancer Site: Live Nano Carriers in Targeted Drug Delivery” in Proceedings of the Stem Cells and Regenerative Medicine International Congress, Mashhad, Iran, May 20-22, 2015.
- Nasibeh Rady Raz, S. Setayeshi, “The Power of Cognitive Science in Over Coming Cancer,” 1st International Nastaran Cancer Symposium, Mashhad, Iran, Oct. 20-22, 2015.
- Nasibeh Rady Raz and M.-R. Akbarzadeh-T., “Communicative Cancer Stem Cells Micro Environment: A New Targeted Island for Nanomedicine” in Proceedings of the Stem Cells and Regenerative Medicine International Congress, Mashhad, Iran, May 20-22, 2015.
- Nasibeh Rady Raz and M.-R. Akbarzadeh-T., “A Bio-Inspired Model for Emergence of Cooperation Among NanoThings” in Proceedings of the 12th Conference on Intelligent Systems (ICIS2014), IEEE, Bam, Iran, Feb. 4-6, 2014.
- Nasibeh Rady Raz and M.-R. Akbarzadeh-T., “Cooperation Tuning in MANETs: A Fuzzy Approach” in Proceedings of the 13th Iranian Conference on Fuzzy Systems (IFSC2013), IEEE, Ghazvin, Iran, Aug. 27-29, 2013.
- Nasibeh Rady Raz and M.-R. Akbarzadeh-T., “New Collaborative Paradigm for Co-evolutionary Particle Swarm Optimization: Equipped with Skepticism Parameter, Group Energizer and Pseudo Random Initialization” in Proceedings of the 21th Conference on Electrical Engineering (ICEE2013), Mashhad, Iran, May 14-16, 2013.
- Nasibeh Rady Raz, M. Yousefi and M.-R. Akbarzadeh-T., “A Voronoi Decomposing Cooperative Learning Particle Swarm Optimization with Random Walk Strategy” in Proceedings of the 11th Conference on Intelligent Systems (ICIS2013), Tehran, Iran, Feb. 27-28, 2013.

Book Chapter:

- Nasibeh Rady Raz and Mohammad Reza Akbarzadeh Totonchi, “Cognitive Knowledge Seeding with Collective Uncertainty Shaping, "In: Shahbazova S., Kacprzyk J., Balas V., Kreinovich V. (eds) Recent Developments and the New Direction in Soft-Computing Foundations and Applications. Studies in Fuzziness and Soft Computing, vol 393. Springer Cham, 2021.

Professional Activities:

- Paper reviewing for IEEE International Conference on Fuzzy Systems (FUZZ-IEEE), Songdo Incheon, Korea, 2023.
- Paper reviewing for 31th Conference on Electrical Engineering (ICEE2023), Amirkabir University, Tehran, 2023.
- Paper reviewing for 2022 IEEE International Conference on Computer and Knowledge Engineering (ICCKE), Nov. 18-19, Mashhad, Iran, 2022.
- Paper reviewing for IEEE 6th International Conference on Smart Cities, IoT and Application, Mashhad, Iran, 14-15 Sep., 2022.
- Paper reviewing for IEEE WCCI 2022 (FUZZ-IEEE), Padua, Italy 18-23 July, 2022.

- Paper reviewing for 2021 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE), Luxembourg, Luxembourg, 11-14 July 2021.
- Paper reviewing for 2020 IEEE International Conference on Computer and Knowledge Engineering (ICCKE), Mashhad, Iran, Oct. 29-30, 2020.
- IEEE Transactions Journal reviewing. (2020- present)
- Nature Journal reviewing. (2020- present)
- Paper reviewing for 2020 IEEE International Conference on Computer and Knowledge Engineering (ICCKE), Mashhad, Iran, Oct. 29-30, 2020,.
- Paper reviewing for Joint Congress on Computational Intelligence 2020 (CCI2020), Mashhad, Iran, Sep. 2-4, 2020.
- Paper reviewing for 2020 IEEE International Conference on Fuzzy Systems, Glasgow, Scotland, UK, July 19-24, 2020.
- Paper reviewing for 2016 IEEE International Conference on Computer and Knowledge Engineering (ICCKE), Mashhad, Iran, Oct. 20-21, 2016.
- Paper reviewing for 2016 IEEE International Conference on Fuzzy Systems, Vancouver, Canada, July 24-29, 2016.
- Paper reviewing for 2015 IEEE International Conference on Fuzzy Systems, Istanbul, Turkey, August 2-5, 2015.

Technical Magazine:

- Nasibeh Rady Raz, "E-papers, The New Flexible Monitors Generation," Rayaneh Magazine, Vol. 19, Num. 179, 2008.

Research Project:

- Cognitive swarm nano intelligence with biomimicry in complex systems, Iran National Science Foundation Research Grant, 2021.
- House price estimation using fuzzy logic, Mashhad municipally, 2017.
- Cognitive coordination among nanomachines for drug and oxygen delivery in cancer using Bloom's taxonomy of the cognitive domain, Cognitive science and technologies council, 2017.
- Swarm control using softcomputing techniques and cognitive science concepts, Iran's National Elites Foundation, 2017.
- Target drug delivery using nanomachines, Nanotechnology council, 2016.
- Under working Research Project: 9

Apply for Patent:

- Designing and building swarm education robotic platform (Bio swarm) for learning to analyze cognitive tasks among artificial things for improving performance.

Invited Lectures:

- "Artificial Intelligence in Gynecology and Obstetrics," Rasoul Akram Hospital, Iran University of Medical Sciences, Tehran, 2023.
- "Artificial Intelligence in Surgery," Rasoul Akram Hospital, Iran University of Medical Sciences, Tehran, 2023.

- "Artificial Intelligence in Cardiology," Rasoul Akram Hospital, Iran University of Medical Sciences, Tehran, 2023.
- "Artificial Intelligence in Medicine," Firozgar Hospital, Iran University of Medical Sciences, Tehran, 2022.
- "Creative Needs of Humanity," lecture of the research week, SCIIP, Ferdowsi University of Mashhad, Mashhad, 2019.
- "Creative Needs of Humanity," lecture of the research week, SCIIP, Ferdowsi University of Mashhad, Mashhad, 2019.
- "Creative Needs of Humanity," lecture of the research week, SCIIP, Ferdowsi University of Mashhad, Mashhad, 2019.
- " Grand Challenges of Humanity," lecture of the research week, SCIIP, Ferdowsi University of Mashhad, Mashhad, 2017.
- "Creative Lessons from Nature, Clever Solutions for Today's Grand Challenges," lecture of the research week, Bahar Institute of Higher Education, Mashhad, 25 Nov 2014.

Teaching Experience

- Iran University of Medical Sciences (iums.ac.ir)
 - Introduction to Medical Robotics
 - Morning Report Talk at Firozgar and Rasoul Akram Hospitals
 - Artificial Intelligence in Medicine
 - Artificial Intelligence in Cardiology
 - Artificial Intelligence in Surgery
 - Artificial Intelligence in Gynecology and Obstetrics
 - Artificial Intelligence in Neurosurgery (Upcoming)
 - Artificial Intelligence in Pediatrics (Upcoming)
 - Artificial Intelligence in Ophthalmology (Upcoming)
 - Artificial Intelligence in Internal Medicine (Upcoming)
 - Artificial Intelligence in Pathology (Upcoming)
- Ferdowsi University of Mashhad (um.ac.ir)
 - Teaching Assistance:
 - Soft Computing
 - Fuzzy logic
 - Fuzzy Control
 - Technical English
- Bahar Institute of Higher Education (baharihe.ac.ir)
 - Artificial Intelligence
 - Computational Intelligence
 - Technical English
 - Algorithm Design
 - Operating System
 - Designing user interface
 - Computer Simulation
 - Web site Designing
 - Network Operating System Laboratory
 - Project Directing (Over 70 project)

- Ferdows Institute of Higher Education
 - Technical English

Conference Organizing

- Joint Congress on Computational Intelligence (CCI2020).
- IAG-Regional Conference on Geomorphology (IAG-RCG2020)

Workshops Organizing

- Introduction to Artificial Intelligence in Cancer, Pathology and Cancer Research Center, Iran University of Medical Sciences, 2023. (Upcoming)

Special Session Organizing

- Nasibeh Rady Raz and M.-R. Akbarzadeh-T., Uncertainty Handling in Distributed Artificial Intelligence and Complex Swarm Systems, Special Session for FUZZ-IEEE2023, Songdo Incheon, Korea, 2023.
- Nasibeh Rady Raz and M.-R. Akbarzadeh-T., Multiagent/Swarm Fuzzy and Intelligent Systems, FUZZ-IEEE2021, Luxembourg, Luxembourg, 11-14 July 2021.
- Nasibeh Rady Raz and M.-R. Akbarzadeh-T., Complex Systems & Emergent Behavior, Joint Congress on Computational Intelligence (CCI 2020), Mashhad, Iran, 4-6 March 2020.
- Nasibeh Rady Raz and M.-R. Akbarzadeh-T., Intelligent Cognitive Decision Making of Social Things, IEEE World Congress on Computational Intelligence (WCCI) 2020, Glasgow, Scotland, UK, July 19-24, 2020.

Workshops

- Data Analysis, Joint Congress on Computational Intelligence, Ferdowsi University of Mashhad, 2020.
- Soft Robotics, a revolution in the Robotics, 6th International Conference on Robotics and Mechatronics (ICRoM'18), Iran University of Science and Technology, Tehran, 23 Oct, 2018.
- Certificate of Attending Workshop on University Teacher training, Ferdowsi University of Mashhad, Mashhad, Iran, 2018.
- Certificate of Attending Workshop on University Teaching Training Courses, Ferdowsi University of Mashhad, Mashhad, Iran, 2018.
- Introduction to the Brain Implant Design by Cognitive Science and Technologies Council, 26th Iranian Conference on Electrical Engineering (ICEE), Sadjad University of Technology, Mashhad, Iran, 9-10 May, 2018.
- Interdisciplinary Talk on Stem cell, Ferdowsi University of Mashhad, Mashhad, Iran, Apr. 19-21, 2017.
- Certificate of Attending Workshop on 2st International Nastaran Cancer Symposium, Mashhad, Iran, 2016.
- Certificate of Attending Workshop on Dynamic Brain and the Emergence of Cognition, Ferdowsi University of Mashhad, Mashhad, Iran, on Oct. 27-28, 2015.
- Certificate of Attending Workshop on Cytodiagnosics and Circulating Tumor Cells (CTC), Ferdowsi University of Mashhad and Mashhad University of Medical Science, Mashhad, Iran, on Oct. 1, 2013.

- Certificate of Attending Workshop on Cognitive Science: Opportunity and challenges, Ferdowsi University of Mashhad, Mashhad, Iran, on 03 Oct 2013.
- Certificate of Attending Workshop on 1st National Workshop on Soft Computing and Intelligent Systems (WSCIS2011), Ferdowsi university of Mashhad, Iran, on 26-27 May 2011.
- Certificate of Attending the Iranian Conference on chaos, fractal and complex system, AUM, 2010.

Scientific Membership

- National Elites Foundation (2016-present)
- Center of Excellence on Soft Computing and Intelligent Information Processing (2013- present)
- Iranian Fuzzy Systems Association (2013-present)
- Young Researchers and Elite Club (2012- present)
- Intelligent Systems Scientific Society of Iran (ISSSI) (2011- present)
- Computer Society of Iran (2009- present)
- Iranian Society of Nanomedicine
- Iranian Society for Cognitive Science & Technology
- Robotics Society of Iran (RSI) (2017- present)

PhD Courses

Complex Systems, Cognitive Sciences, Human and Computer Interface, Advanced Operational Research, Design of Experience, System Identification, Fuzzy Logic & control, Reinforcement Learning, And Probabilistic Graphical Model.

MS Courses

Soft Computing, Neural Network, Machine Learning, Evolutionary Algorithms, Multi agent Systems, Fuzzy Systems, Pattern Recognition, Game Theory

Relevant Skills

- Language Skills: Fluent in English (Speech, Writing, Reading, Listening, and Calligraphy)
- Computer and Programming skills such as:
MATLAB, Python, Simulink, SimBiology, Java, .NET, R, ASP, C#, Flash, HTML, JavaScript, SQL, SilverLight, AJAX, NetBeans, Java based Molecular communication simulator, Photoshop, Carol Draw, SOLIDWORKS, data analysis software, Microsoft Office, LATEX, Cisco.