CONTACT INFORMATION

Sarvestan Apartment Complex 12th East Aseman, paknejad Blvd, Sa’adat Abad district. Tehran, Iran.

Postal code: 1998184699.

E-mail: [asheikhi@sharif.edu,](mailto:sheikhi@ee.sharif.edu) [aras.sheikhi@yahoo.com](mailto:aras.sheikhi@yahoo.com) Cell Phone: +98-912-661-3840, Telephone: +98(21)22090118

ACADEMIC POSITIONS

2018 to present **Assistant Professor**

Sharif Energy Research Institute

Sharif University of Technology (SUT), Tehran, Iran

2016-2018 **Post-Doctoral Fellow**

Smart Grid

Department of Electrical Engineering

Sharif University of Technology (SUT), Tehran, Iran

Adviser: Prof. M.A. Ranjbar [(amranjbar@sharif.edu](mailto:amranjbar@sharif.edu))

EDUCATION

**Sharif University of Technology (SUT),** Tehran, Iran

2012-2016 Ph.D. in Electrical Engineering (High Distinction)

GPA:**17.92/20**

**Ph.D. Dissertation: Smart Energy Hub Optimal Operation; Game Theoretic Approach** (Grade: Excellent)Adviser: Prof. M.A. Ranjbar [(amranjbar@sharif.edu](mailto:amranjbar@sharif.edu))

**Sharif University of Technology (SUT),** Tehran, Iran

2010-2012 Master of Science in Electrical Engineering GPA: **18.05/20**

**Ranked 1st** (based on total GPA) among all M.Sc. students of Power Engineering

**M.Sc. Thesis: Optimal sizing and operation for a multi-carrier energy system equipped with CCHP** (Grade 20/20) Adviser: Prof. M.A. Ranjbar [(amranjbar@sharif.edu](mailto:amranjbar@sharif.edu))

**Sharif University of Technology (SUT),** Tehran, Iran

2005-2009 Bachelor of Science in Electrical Engineering GPA: **18.37/20**

**Ranked 1st** (based on total GPA) among all B.Sc. students of Power Engineering

**BSc Thesis:** [**A new configuration of switched reluctance motor for reducing the torque ripple**](http://scholar.google.com/citations?view_op=view_citation&amp;hl=en&amp;user=fvwLybkAAAAJ&amp;citation_for_view=fvwLybkAAAAJ%3AYsMSGLbcyi4C)**.** (Grade 20/20) Adviser: Dr. Sh. Kaboli [(Kaboli@sharif.edu](mailto:(Kaboli@sharif.edu))

1998 –2005 **NODET** (National Organization of Development of Exceptional Talents), Karaj, Iran Pre-University, Senior High School and Middle School

GPA: **19.89/20**

**Ranked 14th** in National Wide Graduate Studies University Entrance Exam among nearly one million graduate students

*Remark:* Around 1,200,000 students from all over the country participate in a nationwide entrance exam to be selected in NODET school.

SCHOLARSHIPS&GRANTS:

Winter 2021 Research Grant for Early Wild Fire Detection System, Elite National Foundation

Spring 2019 Research Grant for Blockchain-based Energy Saving Platform for Customer Loyalty Rewards, Elite National Foundation,

Spring 2018 Research Grant for Smart Energy Hub, Elite National Foundation, (Kazem Ashtianie grant)

Winter 2016 Research Grant, Sharif University of Technology (Allameh Tabatabaie grant)

Fall 2015 Awarded Sharif University fellowship for Distinguished Students.

Spring 2014 Awarded Sharif University fellowship for Distinguished Students.

Summer 2009-2016 Research Grant, Elite National Fundation.

RESEARCH INTERESTS

* Industry 4.0
* AI Applications in Power Systems Operation and Planning
* Integrated Demand Side Management (DSM) and Home Energy Management
* Renewable Energy Resources Integration
* Smart Energy Hub Networks
* PHEVs Charging Management
* Game Theory and Strategic Analysis of Auctions
* Biding Strategies in Electricity Markets and Mechanism Design
* Distribution generations; Sizing and Allocation
* Optimization Techniques
* Energy Modeling and Energy Transition
* Green Economy
* Sustainable Energy Systems

# RECENT RESEARCH EXPERIENCES:

Winter 2021 Head of a research team to develop **“Early Wild Fire Detection System”,** TehranMunicipality.

Spring 2020 Head of a research team to develop **“Blockchain-based Energy Saving Platform for Customer Loyalty Rewards”**, Deputy of Science and Technology.

Spring 2019 Head of a research team **“Frequency Stability Enhancement in Dominated Wind Power Plants Grid”,** Ministry of Power

Spring 2018 Head of a research team **“Peer to Peer Energy Sharing Among Smart Energy Hubs”**, Smart Sustainable Research Center, Sharif University of Technology.

Spring 2017 Head of a research team **“Optimal Contract Design in the Ancillary Service Market”**, Electrical Engineering Department, Sharif University of Technology.

Fall 2016 Head of research group in Power System Research Lab in Sharif University of Technology (SUT) **“Modelling Natural Gas and Electricity Mix Market in The Smart Energy Hub Framework”**

Spring 2016 In charge of the joint venture project with University of Stavanger (Norway) **“Applying your simulation tools/methods for different energy system integration (CHP+RES) and techno-economy evaluations for CHP operation”**

Spring 2014Member of a research team to develop **“Lighting interior design standard”** Management and Planning Organization of Iran.

Spring 2013 In charge of research group to perform national project **“national standard for CHP and micro- CHP systems in industrial, commercial and residential sectors.”**

Winter 2012 Member of research group under supervision of Niroo Research Institute to provide **“Feasibility study of supplying 20,000 residential units in Chitgar district by CHP systems”**

Fall 2012 **“Four scenario of Iran Power Generation and Electricity Network”**, under supervision of Dr. A. Maleki. (As a Research Project for Iran Energy Ministry)

Summer 2011 **Small Signal Modeling and Analyze of an Islanding Power System with DGs**, under supervision of Prof. A. M. Ranjbar

Spring 2011 Research on **Normal Forms and Modal Series and its Applications in Power Systems**, under supervision of Prof. M. Parniani.

# RECENT INDUSTRIAL EXPERIENCES:

Winter 2021 **Nargan Co.: Developing A Digital Tween for A Reciprocating Compressor**

Co-PI: Aras Sheikhi

Amount: 20k USD

Fall 2020 **NIORDC: NIORDC Restructuring Road Map**

PI: Aras Sheikhi

Amount: 15k USD

Fall 2019 **CNG Management: Smart CNG Statins, R&D and best practice solution**

PI: Aras Sheikhi

Co-PIs: Dr. Mohammad Bagher Ghaznavi, Dr. Mohammad Hassan Saeedi, Sharif University of Technology

Amount: 110k USD

HONORS

Dec-2015 Selected as “**Distinguished student**” of Sharif University and awarded by the Elite National Foundation.

Dec-2012 Selected as the “**The Best Teacher Assistance Award”** of EE department, Sharif University of Technology.

Oct-2012 Selected as “**Distinguished student**” of Sharif University and awarded by the President of Sharif University to pursue PhD. Program without entrance exam and with fully fiscal support.

Oct-2011 **Ranked 1st** among all Power Engineering MS.c. students at Sharif University of technology and selected as “Distinguished student” of Sharif University and awarded by the President of Sharif University to pursue PhD. Program.

Oct-2009 **Ranked 1st** among all Power Engineering BS.c. students at Sharif University of technology and selected as “**Distinguished student”** of Sharif University and awarded by the President of Sharif University to pursue MS. Program.

* + *Remark:* ***top 3*** *students, are selected as distinguished student in Sharif University annually and awarded both admission and fellowship for studying in upper level studies.*

Sep-2007 Awarded Dean’s honor by president of Sharif University of Technology as a youngest researcher

July-2005 **Ranked 14th** among around 1,200,000 participants in the ***“Nationwide University Entrance Exam”***

# PUBLICATIONS

# Selected Conferences:

* AA Zadeh**, A Sheikhi,** AM Ranjbar, “Assessment of Frequency Stability Enhancement in Dominated Wind Power Plants Grid”, 9th International Conference on Power and Energy Systems (ICPES), IEEE, Perth, Australia, 2019
* S Khazeni, **A Sheikhi**, M Rayati, AM Ranjbar, “Equilibrium of Integrated Retail Market by Considering Emission Penalties: Bi-level Game Modeling”, 9th International Conference on Power and Energy Systems (ICPES), IEEE, Perth, Australia, 2019
* **A Sheikhi**, M Rayati, AM Ranjbar, “Demand side management in a group of Smart Energy Hubs as price anticipators; the game theoretical approach”, Innovative Smart Grid Technologies Conference (ISGT), IEEE Power and Energy, Washington DC, 2015
* **A Sheikhi**, M Rayati, AM Ranjbar, “Energy Hub optimal sizing in the smart grid; machine learning approach”, Innovative Smart Grid Technologies Conference (ISGT), IEEE Power and Energy, Washington DC, 2015
* M Rayati, **A Sheikhi**, AM Ranjbar, “[Applying reinforcement learning method to optimize an Energy Hub operation in the smart grid](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=fvwLybkAAAAJ&cstart=20&citation_for_view=fvwLybkAAAAJ:ULOm3_A8WrAC)”, Innovative Smart Grid Technologies Conference (ISGT), IEEE Power and Energy, Washington DC, 2015
* **A Sheikhi**, M Rayati, S Bahrami, A M. Ranjbar, “Demand Side Management in a group of Smart Energy Hubs as price anticipators; the game theoretical approach”, 2015 IEEE Power & Energy Society Innovative Smart Grid Technologies Conference (ISGT), 2015
* **A.Sheikhi**, S. Bahrami, A.M. Ranjbar, S. Sattari “ Financial analysis for a multi-carrier energy system equipped with CCHP” International Conference on Renewable Energies and Power Quality (ICREPQ), Bilbao, 2013.
* **A.Sheikhi**, A. Maani, A.M. Ranjbar “Distributed generaton penetration impact on distribution network loss” International Conference on Renewable Energies and Power Quality (ICREPQ), Bilbao,2013.
* **A Sheikhi**, A Maani, AM Ranjbar, “[Evaluation of intelligent distribution network response to plug-in hybrid electric vehicles](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=fvwLybkAAAAJ&citation_for_view=fvwLybkAAAAJ:0EnyYjriUFMC)”, PowerTech IEEE, Grenoble, 2013.
* **A. Sheikhi**, A.M. Ranjbar, F. Safe, “A novel method to determine the best size of CHP for an energy hub system”, EPECS, IEEE International Conference on Electric Power and Energy Conversion Systems American University of Sharjah, UAE, 2011
* **A. Sheikhi**, A. Maleki “Using Trends and Scenarios as a Tool for Studying of Iran Power Generation and Electricity Network in Future”,The 8th International Energy Conference, Tehran, Iran, May,2011
* **A. Sheikhi**, A.M. Ranjbar, F. Safe, M. Mahmoodi “ CHP optimized selection methodology for an energy hub system”, Environment and Electrical Engineering (EEEIC), 10th International conference, Rome, Italy, 2011
* **A.Shaikhi**, B. Mozafari, A.M. Ranjbar, F. Safe “CHP Optimized Selection Methodology for a Multi-Carrier Energy System” IEEE PowerTech, Trondheim, Norway, 2011.
* **A Sheikhi**, A.M. Ranjbar, F Safe, “[Optimal dispatch of a multiple energy carrier system equipped with a CCHP](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=fvwLybkAAAAJ&citation_for_view=fvwLybkAAAAJ:_FxGoFyzp5QC)”, International Conference on Renewable Energies and Power Quality (ICREPQ), Spain, 2011.
* **A Sheikhi**, M Khosravi, B Mozafari, AM Ranjbar, A Hajjam, “[Optimized Gas Pricing Policy to Have Maximally Peak Shaving](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=fvwLybkAAAAJ&cstart=20&citation_for_view=fvwLybkAAAAJ:Tyk-4Ss8FVUC)”, International Conference on Renewable Energies and Power Quality (ICREPQ), Spain, 2011.
* **A. Sheikhi**, A. Maani, A.M. Ranjbar “The influence of The Intelligent Distribution Network on Plug in Hybrid Electrical Vehicles Penetration Level” ISGT Conference, Gothenburg, Sweden, 2010.
* Mahdi Saifi, **A. Sheikhi**, Ali Kermanshah “Privatization Management in Iran’s Electrical Industry Structure in Regard to Other Countries’ Experiences”, IASK International Conference Global Management, USA, 2009
* **A. Sheikhi**, H. Oraee, Sh. Kaboli “A new configuration of Switched Reluctance Motor for reducing the torque ripple”, EPECS, IEEE International Conference on Electric Power and Energy Conversion Systems American University of Sharjah, UAE, 2009
* Sh. Kaboli, **A. Sheikhi**, A.H. Rajaei, “Application of Random PWM Techniques for Reducing the Electromagnetic Interference of Vienna Rectifiers in Distribution Power Systems”, IEEE 6th International Power Electronics and Motion Control Conference-ECCE Asia, Wuhan, China, 2009.

# Journal

* H Goodarzi, Mo Rayati, **A Sheikhi**, AM Ranjbar, “A clearing mechanism for joint energy and ancillary services in non-convex markets considering high penetration of renewable energy sources”, International Journal of Electrical Power & Energy Systems, 129(106817), 2021.
* S Khazeni, **A Sheikhi**, S Soleymani, AM Ranjbar, “Optimal Strategy of Energy retailer in Integrated Market using smart energy hub framework”, Energy Engineering & Management, 11(1), 2021.
* M Rayati, **A Sheikhi**, AM Ranjbar, W Sun, “Optimal Equilibrium Selection of Price-Maker Agents in Performance-Based Regulation Market”, Journal of Modern Power Systems and Clean Energy, 2020.
* M Rayati, **A Sheikhi**, AM Ranjbar, “Optimal Contract Design for Purchasing from Frequency Regulation Service Providers with Private Information”, IEEE Transactions on Power Systems, 34(3), 2445-2448, 2019.
* Khazeni, **A Sheikhi**, M Rayiati, S Soleymani, AM Ranjbar, “Retail Market Equilibrium in Multicarrier Energy Systems: A Game Theoretical Approach”, IEEE Systems Journal, 13(1), 738-747, 2018.
* M Roustai, M Rayati, **A Sheikhi**, AM Ranjbar, “A Scenario-Based Optimization of Smart Energy Hub Operation in a Stochastic Environment using Conditional-Value-at-Risk”, Sustainable Cities and Society, 39, 309-316, 2018.
* M. Mehraban, M. Rayati, **A. Sheikhi**, A.M. Ranjbar, “Practical Battery Size optimization of a PV system by considering individual customer damage function”, Renewable & Sustainable Energy Reviews, 67, 36-50, 2017
* **A Sheikhi**, M Rayati, AM Ranjbar,” Demand Side Management for a Residential Customer in Multi Energy systems”, Sustainable Cities and Society, 22, 63-77, 2016
* **A. Sheikhi**, M Rayati, AM Ranjbar, “Dynamic load management for a residential customer; Reinforcement Learning approach”, Sustainable Cities and Society 24, 42-51, 2016
* **A Sheikhi**, S Bahrami, AM Ranjbar, “[An autonomous demand response program for electricity and natural gas networks](https://scholar.google.com/citations?view_op=view_citation&amp;hl=en&amp;user=fvwLybkAAAAJ&amp;citation_for_view=fvwLybkAAAAJ%3AYOwf2qJgpHMC) [in smart energy hubs](https://scholar.google.com/citations?view_op=view_citation&amp;hl=en&amp;user=fvwLybkAAAAJ&amp;citation_for_view=fvwLybkAAAAJ%3AYOwf2qJgpHMC)” Energy 89, 490-499, 2015
* S Bahrami, **A Sheikhi**, “From Demand Response in Smart Grid Toward Integrated Demand Response in Smart Energy Hub”, Smart Grid, IEEE Transactions on 7 (2), 650-658, 2015
* **A Sheikhi**, M Rayati, S Bahrami, A. M. Ranjbar,” [Integrated demand side management game in smart energy](https://scholar.google.com/citations?view_op=view_citation&amp;hl=en&amp;user=fvwLybkAAAAJ&amp;citation_for_view=fvwLybkAAAAJ%3A3fE2CSJIrl8C) [hubs](https://scholar.google.com/citations?view_op=view_citation&amp;hl=en&amp;user=fvwLybkAAAAJ&amp;citation_for_view=fvwLybkAAAAJ%3A3fE2CSJIrl8C)” Smart Grid, IEEE Transactions on 6 (2), 675-683, 2015
* S Bahrami, **A Sheikhi**, “[An Optimal Feed-In-Tariff Policy for Renewable Energies Using A Markov Model](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=fvwLybkAAAAJ&cstart=20&citation_for_view=fvwLybkAAAAJ:KlAtU1dfN6UC)”, American Journal of Renewable and Sustainable Energy 1 (1), 1-8, 2015.
* **A Sheikhi**, M Rayati, S Bahrami, AM Ranjbar, S Sattari, “[A cloud computing framework on demand side management](https://scholar.google.com/citations?view_op=view_citation&amp;hl=en&amp;user=fvwLybkAAAAJ&amp;citation_for_view=fvwLybkAAAAJ%3A5nxA0vEk-isC) [game in smart energy hubs](https://scholar.google.com/citations?view_op=view_citation&amp;hl=en&amp;user=fvwLybkAAAAJ&amp;citation_for_view=fvwLybkAAAAJ%3A5nxA0vEk-isC) “ International Journal of Electrical Power & Energy Systems 64, 1007-1016, 2015
* M Rayati, **A Sheikhi**, AM Ranjbar, “ [Optimising operational cost of a smart energy hub, the reinforcement learning](https://scholar.google.com/citations?view_op=view_citation&amp;hl=en&amp;user=fvwLybkAAAAJ&amp;citation_for_view=fvwLybkAAAAJ%3A8k81kl-MbHgC) [approach](https://scholar.google.com/citations?view_op=view_citation&amp;hl=en&amp;user=fvwLybkAAAAJ&amp;citation_for_view=fvwLybkAAAAJ%3A8k81kl-MbHgC)” International Journal of Parallel, Emergent and Distributed Systems, 30( 4), 325-341, 2015
* M Keshavarz A.M Ranjbar M Sedighizadeh **A Sheikhi**, “Bi-Objective function micro grid optimal operation using a hybrid algorithm”, International Journal on “Technical and Physical Problems of Engineering”, 5(1), 149-162, 2013.
* **A.Sheikhi**, S. Bahrami, A. M. Ranjbar “Strategic Charging Method for Plugged in Hybrid Electric Vehicles: A Game Theoretic Approach”, International Journal of Electrical Power & Energy Systems 53, 499-506, 2013
* S Bahrami, **A Sheikhi**, AM Ranjbar, F Safe “A Financial Approach to Evaluate an Optimized Combined Cooling, Heat and Power System”, Energy and Power Engineering, 5(5), 352-362, 2013
* **A.Sheikhi**, A. M. Ranjbar, H. Oraee “Financial Analysis and optimal size and operation for a multi-carrier energy system”, Energy and Buildings, 48, 71-78, 2012
* **A Sheikhi,** AM Ranjbar, H Oraee, A Moshari, “Optimal Operation and Size for an Energy Hub with CCHP”, Energy and Power Engineering, 3, 641-649, 2011
* **A Sheikhi**, MS Naderi, AM Ranjbar, GB Gharehpetian, F Safe, "CHP Optimized Selection Methodology for a Multi-Carrier Energy System" International Review of Electrical Engineering (IREE), 6( 4), 1839-1846, 2011

BOOKS

* Moradof, M. J., **A. Sheikhi**, M. Rayati, and A. M. Ranjbar. "Comparing the wind and solar power uncertainty in virtual power plants using IGDT method." In Emerging Developments in the Power and Energy Industry, pp. 796-809. CRC Press, 2019.
* Introduction to Game Theory, AM Ranjbar, M Rayati, A Sheikhi, SH Fahiminia, Kanoon nashr e olum, 2019.
* Renewable Energy Resources (Translation), A Sheikhi, A Mahmoudi, F Seif, AM Ranjbar, Kanoon nashr e olum, 2018.

TEACHING EXPERIENCES

* Spring 2021 Lecturer “**Electricity Installation**”, course, SUT, EE Department
* Spring 2020 Lecturer “**Electricity Installation**”, course, SUT, EE Department
* Fall 2019 Lecturer “**Electricity Disciplines II**.”, course, SUT, EE Department
* Spring 2019 Lecturer “**Electricity Disciplines II**.”, course, SUT, EE Department

EXTRACURRICULAR ACTIVITIES

### Summer 2017- Present Organizer of the commemoration ceremony of Prof. Maryam Mirzakhani.

* Fall 2012- Present Board of the first nonprofit educational website in Iran. <http://maktabkhooneh.org/>
* Fall 2011 Human Resource Manager of 6th Mechanical and Electrical Engineering Industrial Festival in Sharif University of Technology.
* 2008- 2010 Member of Soccer (As a goal keeper), Ping-Pong and Basketball of SUT teams.

### Sep 2007-Sep 2008 Head of Literature Club of Sharif University of Technology, SUT.

### June 2006- Present Member of the students Council in electrical engineering Department

### Remarks (Students Council is the Cultural, social & Scientific Group of Students, Doing extracurricular activities of School of Electrical Engineering).

WORKSHOPS (**participated**)

* Nov 2012 Personality Cognition in Negotiation,
* Nov 2009 Entrepreneurship Principles, SUT

WORKSHOPS (**lectured**)

* Spring 2020 Sustainable Development; threat and opportunities (Ministry of Power)
* Spring 2019 Sustainable Energy Resources, (Ministry of Power)
* Sep 2019 Future Study, As a method of thinking (Sharif University of Technology)
* Nov 2018 AI Effects on the Future of Smart Grid. (Power Research Institute)

COMPUTER SKILLSS

* Programming languages:
  + - C++, Q basic
* Technical Software:
  + - DIALux
    - Hommer
    - DIg SILENT
    - Power Word
    - GAMS
    - Mathematical Simulation: MATLAB
    - COMFAR

LANGUAGES

Persian: (Native)

English: (Fluent)

Spanish: (Upper Intermediate Level)

* To find out more please visit my Google Scholar citation at this address:
* <https://scholar.google.com/citations?hl=en&user=fvwLybkAAAAJ&view_op=list_works&sortby=pubdate>