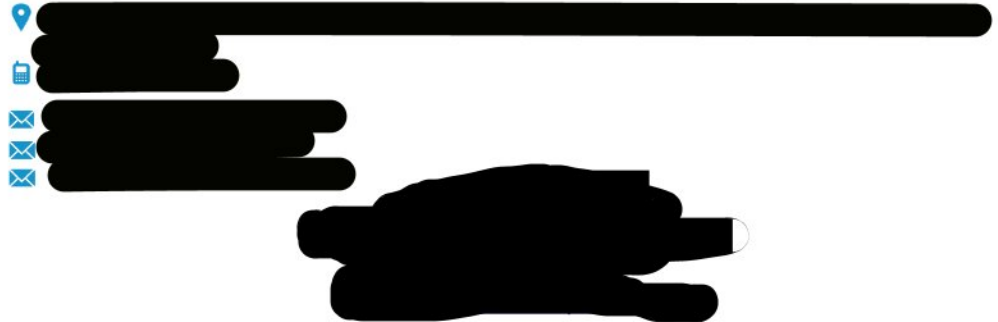


## PERSONAL INFORMATION

Saeed Javanmardi



### Research Interest

My research interests fall into security-aware resource management in SDN-based IoT-Fog networks. It involves investigating and developing techniques to ensure the efficient allocation and utilization of resources in these dynamic and complex networks while ensuring security measures are in place to protect against potential threats and attacks. The aim is to enhance IoT-Fog networks' overall performance, reliability, and security through intelligent resource management strategies. I work on multi-objective optimization to strike a balance between performance metrics such as energy consumption and delay in IoT-Fog networks. My research interests focus on addressing these networks' unique challenges and vulnerabilities. I aim to develop innovative security solutions that leverage the capabilities of SDN to enhance the protection of IoT devices and data in fog computing environments. By utilizing programmable network configurations and software-based controllers, I seek to improve the performance, reduce provisioning costs, and simplify monitoring these networks.

### Education

**Postdoc:** Researcher at Salento University, Lecce, Italy.

**Title:** Security and task scheduling in drones (IoD-Fog networks).

**Starts** on 01/08/2022 and ends on 31/01/2024.

Working on security approaches and resource management approaches in drones for RIPATI corporation.

It is funded by RIPARTI corporation.

**CODICE CUP:** F87G22000310002, **Codice Progetto:** 11070ad0\_

**Supervisor:** Professor Antonio Caruso

**Doctor of Philosophy (Ph.D.)** in Information Technology Electrical Engineering (ITEE) at Federico II University (Napoli, Italy).

**Starts** on 01/11/2018 and ends on 31/01/2022.

**Thesis Title:** Resource scheduling approaches for performance optimization in IoT-Fog networks.

**Thesis Details:** Employing multi-objective optimization approaches that consider security and efficiency. We devised frameworks that consist of a security access control and resource scheduling mechanism that acts as a firewall to protect scheduling services.

**Supervisor:** Full professor Antonio Pescape.

**Master of Science (MSc)** in Computer Architecture at Islamic Azad University, Dezful, Iran.  
**Starts** on 01/10/2010 and ends on 30/09/ 2012.

**Thesis Title:** Resource management approaches in Grid networks

**GPA=** 16.53 (out of 20) (With Thesis)

**Supervisor:** Professor Mohammad Mosleh.

**Bachelor of Science (BSc)** in Software engineering at Islamic Azad University, Shiraz, Iran.

**Starts** on 01/10/2006 and ends on 30/09/ 2009.

**GPA=** 15.15 (out of 20) (With Thesis)

## ● Publications (Journals/Papers/Book Chapter)

### ▪ ISI Journals

1. Shojafar, M., **Javanmardi, S.**, Abolfazli, S., & Cordeschi, N. (2015). FUGE: A joint meta-heuristic approach to cloud job scheduling algorithm using fuzzy theory and a genetic method. **Impact Factor 4.4**, Springer Cluster Computing, 18(2), 829-844.
2. **Javanmardi, Saeed**, Mohammad Shojafar, Shahdad Shariatmadari, Jemal H. Abawajy, and Mukesh Singhal. "PGSW-OS: a novel approach for resource management in a semantic web operating system based on a P2P grid architecture." **Impact Factor 3.3**, springer *the journal of supercomputing* 69, no. 2 (2014): 955-975.
3. **Javanmardi, S.**, Shojafar, M., Persico, V., & Pescapè, A. (2020). FPPTS: A joint fuzzy particle swarm optimization mobility-aware approach to fog task scheduling algorithm for Internet of Things devices. **Impact Factor: 3.28**, Wiley and sons, *Software: Practice and Experience*.
4. **Saeed Javanmardi**, Mohammad Shojafar, Reza Mohammadi, Amin Nazari, Valerio Persico, and Antonio Pescapè. (2021), "FUPE: A Security Driven Task Scheduling Approach for SDN-based IoT-Fog Networks." **Impact Factor: 4.962**, the Journal of Information Security and Applications (Elsevier).
5. **Saeed Javanmardi**, Mohammad Shojafar, Reza Mohammadi, Valerio Persico, and Antonio Pescapè, (2023), "S-FoS: A secure workflow scheduling approach for performance optimization in SDN-based IoT-fog networks". **Impact Factor: 4.962**, the Journal of Information Security and Applications (Elsevier).
6. **Javanmardi, Saeed**, Mohammad Shojafar, Reza Mohammadi, **Mamoun Alazab**, and Antonio M. Caruso. "An SDN perspective IoT-Fog security: A survey." **Impact Factor: 5.49**, Elsevier Computer Networks (2023): 109732.
7. **Revision, Saeed Javanmardi**, Meysam Ghahramani, Mohammad Shojafar, **Mamoun Alazab**, Antonio Caruso (2023), "M-RSS: A mobility-aware impersonation-resistant IDS for DDoS attacks in IoT-Fog networks", **Impact Factor: 5.6**, Elsevier Computer and security.
8. **Submitted, Saeed Javanmardi**, Alfredo Nascita, Antonio Caruso, George Loukas, Antonio Pescapè, "An Integration Perspective of Security, Privacy, and Efficiency for IoT-Fog Networks", **Impact Factor: 10.23**, IEEE IoT Magazine.
9. **Submitted, Saeed Javanmardi**, Georgia Sakellari, **Mohammad Shojafar**, Antonio Caruso, "Why it does not work? Metaheuristic Task Allocation Approaches In Fog-enabled Internet of Drones", Elsevier Simulation Modelling Practice and Theory, **Impact Factor 4.2**
10. **Submitted, Saeed Javanmardi**, Alfredo Nascita, Antonio Caruso, George Loukas, Antonio Pescapè, "Toward the Integration of Security, Privacy, and Resource Efficiency in IoT-Fog Networks: A Comprehensive Survey", Elsevier Computer Communications, **Impact Factor 6**

### ▪ Non-ISI Journals

11. **Saeed Javanmardi**, Mohammad Shojafar, Sh. Shariatmadari, Sima Satv Ahrabi, "FRTRUST: a Fuzzy Reputation Based Model for Trust Management in Semantic P2P Grids", **InderScience, International Journal of Grid and Utility Computing**, ISSN: 1741-847X, 2014.
12. Mohammad Mosleh, Shahdad Shariatmadari, and **Saeed Javanmardi**. "RESOURCE MANAGEMENT IN WEB OS BASED ON SEMANTIC WEB TECHNOLOGY." *Global Journal of Technology & Optimization* 3.1 (2012).
13. **Saeed Javanmardi**, et al. "ANovel APPROACH FOR FAULTY NODE DETECTION WITH THE AID OF FUZZY THEORY AND MAJORITY VOTING IN WIRELESS SENSOR NETWORKS." *International Journal* (2012).
14. **Saeed Javanmardi**, Shahdad Shariatmadari, and Mohammad Mosleh. "A Novel Decentralized Fuzzy Based Approach for Grid Resource Discovery." *International Journal of Innovative Computing* 3.1 (2013).
15. **Saeed Javanmardi**, Mohammad Mosleh, Shahdad Shariatmadari, and Seyyed Ebrahim Dashti Rahmat Abadi. "A novel approach for grid resource management based on fuzzy logic and semantic Technology." *International Journal of Innovative Computing* 2.1 (2013).

### ▪ Conferences

16. Javanmardi, S., Shojafar, M., Amendola, D., Cordeschi, N., Liu, H., & Abraham, A. (2014). Hybrid job scheduling algorithm for cloud computing environment. In *Proceedings of the fifth international conference on innovations in bio-inspired computing and applications IBICA 2014* (pp. 43-52). Springer, Cham.

## WORK EXPERIENCE

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1- **Postdoc Researcher** at Salento University, Lecce, Italy. **Project Title:** Security and resource management research projects in drones. **Innovation title:** Integrating security and efficiency. **Starts** on 01/08/2022 and ends on 31/01/2024.

2- **IT Support Technician** at Shabarn company, Tehran, Iran. **Responsibility:** providing technical support and assistance to computer users. **Starts** on 01/04/2014 and ends on 31/09/2015

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## Awards and Honors

1- **Postdoc Scholarship:** Funded by Salento University (Italy) and RIPARTI Corporation. **Starts** on 01/08/2022 and ends on 31/01/2024.

2- **Ph.D. Scholarship:** Funded by Federico II University. **Starts** on 01/11/2018 and ends on 31/01/2022.

## Research Projects

1. **Subject:** Security-aware resource management system in IoT.

Sponsor: Centro Nazionale HPC, Big Data e Quantum Computing – Italian Center for Super Computing (ICSC).

Codice progetto MUR: CN\_00000013 – CUP Unina: E63C22000980007

Year: 2022-2023

Grant amount: 1132 Euros

**2. Subject: Intrusion detection system and task allocation systems in Drones**

Sponsor: RIPARTI corporation. CODICE CUP: F87G22000310002, Codice Progetto: 11070ad0\_

Year: 2023-Ongoing

Grant amount: 1458 Euros

**International Collaborations****1. Subject: Security-aware workflow scheduling in IoT**

- Collaboration with HPC corporation.
- [unina.it/documents/11958/40416139/FIS\\_BANDO\\_AR\\_8-2023-TIP-B.pdf/](https://unina.it/documents/11958/40416139/FIS_BANDO_AR_8-2023-TIP-B.pdf/)
  
- Achievements: Publishing in an Elsevier journal (JISAS)
  
- Details: We focused on addressing the challenges of workflow scheduling in SDN-based IoT-Fog networks while ensuring security and performance optimization. We explored how to efficiently allocate and schedule tasks or workflows in these networks while considering security. It employed traffic anomaly detection techniques within the SDN. It used Rate Limiting and Entropy outputs as input parameters of a fuzzy-enabled intrusion detection algorithm to detect the source of attacks and put away malicious requesters (i.e., IoT devices). The methodology employs multi-objective optimization scheduling to balance load and latency.

**2. Subject: Security defense mechanism in drones.**

- Collaboration with RIPARTI corporation.
- [RIPARTI – cheques of Rlcerca in PARTNERSHIP with the Companies \(regione.puglia.it\)](https://regione.puglia.it/riparti-cheques-of-ricerca-in-partnership-with-the-companies)
  
- Achievements: Submitting in an Elsevier journal (COSE)
  
- Details: DDoS UDP flooding attacks are the most frequent threats to edge resources in Drones. It is crucial for sabotaging fog gateways and can overcome traditional data filtering techniques. We focused on devising a lightweight intrusion detection system with mobility awareness to detect DDOS UDP flooding attacks while considering adversarial devices that engage in IP spoofing. To this end, we analyzed the malicious behaviors that result in anonymity against Rate Limiting and Received Signal Strength (RSS)-based approaches, combined their advantages, and addressed their vulnerabilities.

**Professional Associations**

RIPARTI association.

It is an initiative of the Puglia Region in Italy and ARTI that finances professionalizing research grants for researchers and their inclusion in the regional production system.

## Journal Reviewer

- IEEE Transactions on Intelligent Transportation Systems Journal (Impact factor:8.5), 37 papers
- IEEE Transactions on Dependable and Secure Computing journal, (Impact factor:7.3), 1 paper
- IEEE Systems Journal, (Impact factor:4.4), 11 papers
- IEEE Internet of Things Journal, (Impact factor:10.23), 2 papers
- IEEE Transactions on Network and Service Management Journal, (Impact factor:5.3), 11 papers
- IEEE Consumer Electronics Magazine, (Impact factor:4.5), 4 papers
- IEEE Transactions on Circuits and Systems for Video Technology, (Impact factor:8.4), 14 papers
- IEEE Transactions on Green Communications and Networking, (Impact Factor: 4.8), 1 paper
- IEEE Transactions on Information Forensics & Security, (Impact Factor: 6.8), 2 papers
- Elsevier Computer Networks, (Impact factor:10.7), 13 papers
- Elsevier Simulation Modelling Practice and Theory, (Impact factor:4.2), 1 paper
- MDPI Applied Science, (Impact factor:2.7), 3 papers
- MDPI Drones, (Impact factor 4.8), 2 papers
- Springer Journal of Grid Computing, (Impact factor:5.5), 5 papers
- Springer Journal of Cloud Computing, (Impact factor:3.4), 2 papers
- Springer Journal of Network and Systems Management, (Impact Factor 3.6), 2 papers
- Springer Peer-to-Peer Networking and Applications, (Impact Factor 4.2), 2 papers
- Springer Artificial Intelligence, (Impact factor:12.0), 1 paper
- Taylor & Francis cybernetics and systems journal, (Impact Factor 1.8), 1 paper

## References

### **1- Professor Mohammad Shojafar**

Associate Professor, University of Surrey, EU Marie Curie Alumni, ACM Distinguished Speaker.  
Mohammad is my co-author in most of my works.

Email: [REDACTED]

Web site: [REDACTED]

Phone: [REDACTED]

### **2- Professor George Loukas**

Professor of Cyber Security with particular interest in human-centric, applied and data-driven cyber security applications in cyber-physical environments, University of Greenwich, London, United Kingdom.

Email: [REDACTED]

Phone: [REDACTED]

### **3- Professor Antonio Caruso**

Assistant Professor of Computer Science, University of Salento, Italy.  
He is currently my supervisor in PostDoc program.

Email: [REDACTED]

Phone: [REDACTED]

### **4- Professor Mamoun Alazab**

Associate Professor, Charles Darwin University, Casuarina, NT, Australia.  
I collaborated with Mamoun in a research paper to propose an IDS in IoT-Fog networks.

Email: [REDACTED]

Phone: [REDACTED]