

## Ali Fanian, PhD

Assistant Prof. of Electrical and Computer Engineering Department, Software and Information Technology Group, Isfahan University of technology

Phone: (9831) 33915392 Moblie: 09133014549

Fax: (9831)3391-2451

Email: [a.fanian@iut.ac.ir](mailto:a.fanian@iut.ac.ir) ; [alifanian@gmail.com](mailto:alifanian@gmail.com);

Website: [fanian.iut.ac.ir](http://fanian.iut.ac.ir)

Address: room 318, Electrical and computer engineering department, Isfahan University of technology, Isfahan, Iran, Postal code:8415683111

## Research Interests

---

Computer Security

Blockchain and Smart contract

Computer Network

Machine Learning

## Education

---

Phd (2011)	Isfahan University of Technology, Isfahan, Iran Computer Engineering (Artificial Intelligence) Thesis: Key Management in Wireless Sensor Networks
MS (2002)	Isfahan University of Technology, Isfahan, Iran Computer Engineering (Computer Architecture) Thesis: Full Pipeline Adder and Subtractor for Floating Point Number
BS (1999)	Isfahan University of Technology, Isfahan, Iran Computer Engineering ( Hardware) Thesis: Design and Implementation of a PAL Programmer

## Experience

---

Isfahan University of technology (2011-now)	Department of Electrical and Computer Engineering, As an Assistant Prof.
Isfahan University of technology (2013-now)	Chief of the University Security Research Institute As a Project Manager
Isfahan University of technology (2013-now)	Chief of the University Security Research Institute(CSIRT in IUT) As a Project Manager
Isfahan University of technology (2011-2013)	Head of Computer Group in Department
Isfahan University of technology (2010-2015)	Head of Network Group in the University
Design of a High Speed DDoS Mitigation, 2016-2020	APA IUT Cert, As a Project Manager
Design of a Traffic Classification System, 2016-2018	APA IUT Cert, As a Project Manager
Design of a Statistical based Anomaly Detection System for High Speed Networks, 2016-2019	APA IUT Cert, As a Project Manager
Design of a Automatic Patch Management System, 2015-2018	APA IUT Cert, As a Project Manager

Design and Implementation of the Unified Threat Management system, 2010-2013	Pana Co. As a Project Manager
Design and Implementation of the E1 Line Encryptor 2010-2012	Payampardaz Co. As a Project Manager
Information Technology and Communication Research Center Isfahan University of Technology, 2005-2007	As a researcher: Hardware designing, Microcontroller, FPGA

## Graduate Courses

---

Distributed Operating Systems  
Network Security  
Cryptocurrency & Blockchain and Smart Contract

## Publication (Journal Papers)

---

- Hamed Farsi, Ali Fanian, Zahra Taghiyarrenani, "A novel online state-based anomaly detection system for process control networks", International Journal of Critical Infrastructure Protection, Volume 27, December 2019.
  - Ehsan Mahdavi, **A Fanian**, Fatemeh Amini, "A real-time alert correlation method based on code-books for intrusion detection systems", Computers & Security, Volume 89, February 2020.
  - Ehsan Mahdavi, **A Fanian**, H Hassannejad , "*Classification of encrypted traffic for applications based on statistical features*", The ISC International Journal of Information Security, Volume 10, no 1, pp 29-43, 2018.
  - F Noorbehbahani, **A Fanian**, R Mousavi, H Hasannejad, "*An incremental intrusion detection system using a new semi-supervised stream classification method*", International Journal of Communication Systems, Volume 34, no. 4, 2017
  - K Kazemia, **A Faniana**, "*A Hybrid Method based on Statistical Features and Packet Content Analysis to Identify Major Network Tunneling Protocols*", Journal of Computing and Security, Volume 3, no. 2, 2016.
  - AG Osgouei, AK Koohanestani, H Saidi, **A Fanian**, "*Online assignment of non-SDN virtual network nodes to a physical SDN*", Computer Networks, vol. 129, pp 105-116, 2017.
  - AK Koohanestani, AG Osgouei, H Saidi, **A Fanian**, "*An analytical model for delay bound of OpenFlow based SDN using network calculus*", Journal of Network and Computer Applications, vol. 96, pp 31-38, 2017.
  - E Seifossadat, N Gheissari, **A Fanian**, "*Indoor Scene Recognition Using Local Semantic Concepts*", Advances in Computer Science: an International Journal, vol. 4, no. 3, pp. 29-35, 2015
  - S Vakilian, M Abbasi, **A Fanian**, "*Increasing the Efficiency of TCAM-based Packet Classifiers using dynamic Cut Technique in Geometric Space*", JOURNAL OF PASSIVE DEFENCE SCIENCE AND TECHNOLOGY, vol. 6. no. 1, pp. 65-71, 2015.
  - **A. Fanian**, F. Alamifar, M. Berenjkoub, "*An Efficient Non-Repudiation Billing Protocol in Heterogeneous 3G-WLAN Networks*", the ISC International Journal of Information Security, Vol. 6, No. 2, pp.141-153, July 2014.
-

- 
- H. Khajemohammadi, **A. Fanian** and T.A. Gulliver, "*Efficient Workflow Scheduling for Grid Computing Using a Leveled Multi-objective Genetic Algorithm*", Journal of Grid Computing, vol. 12, no 4, pp 637-663, 2014.
  - **A. Fanian**, M. Berenjkoub, "*An Efficient End to End Key Establishment Protocol for Wireless Sensor Networks*", Journal of Computing and Security, vol.1, no. 1, 2014.
  - F Noorbehbahani, **A Fanian**, R Mousavi, H Hasannejad, "*An incremental intrusion detection system using a new semi-supervised stream classification method*", International Journal of Communication Systems, 2015
  - **A. Fanian**, M. Berenjkoub, H. Saidi and T. Aaron Gulliver, "*A Symmetric Polynomial Based Mutual Authentication Protocol for GSM Networks*", Submitted to the International Journal of Security and Networks, 2012.
  - **A. Fanian**, M. Berenjkoub, H. Saidi and T. Aaron Gulliver, "*A High Performance and Intrinsically Secure Key Establishment Protocol for Wireless Sensor Networks*", Elsevier, Computer Networks journal, 2011.
  - **A. Fanian**, M. Berenjkoub, H. Saidi and T. Aaron Gulliver, "*An Efficient Symmetric Polynomial based Key Establishment Protocol for Wireless Sensor Networks*", the ISC International Journal of Information Security, 2010.
  - **A.Fanian**, M. Berenjkoub, "*An Efficient Secure Mutual Authentication Protocol for GSM Network*", the ISC International Journal of Information Security, 2009.
  - S. Samavi, A. Sadrabadi, **A. Fanian**, "*Modular Array Structure for Non-Restoring Square Root Circuit*", Journal of Systems Architecture, Elsevier, 2008.
  - **A. Fanian**, M. Brenjkoub, S. Samavi, "*Implementation of Rijndael Algorithm Based on Multi-Beat Architecture* ", Journal of Intelligent Processing, 2008. (Farsi)

---

### Publication ( Selected Conference Papers)

---

- Z. Taghiyarrenani, **A. Fanian**, E. Mahdavi, A. Mirzaei, H. Farsi, "*Transfer Learning Based Intrusion Detection*", 8th International Conference on Computer and Knowledge Engineering (ICCKE), pp 92-97, 2018.
- **K Kazemia**, **A Faniana**, "*Tunneling protocols identification using light packet inspection*", 12th Information Security and Cryptology (ISCISC), pp. 110-115, 2015.
- **AG Osgouei**, **AK Koohanestani**, **H Saidi**, **A Fanian**, "*Analytical performance model of virtualized SDNs using network calculus*", 23rd Iranian Conference on Electrical Engineering (ICEE), pp. 770-774, 2015.
- **S Vakilian**, **M Abbasi**, **A Fanian**, "*Increasing the efficiency of TCAM-based packet classifiers using intelligent cut technique in geometric space*", 23rd Iranian Conference on Electrical Engineering (ICEE), pp. 625-630, 2015.
- **H Khajemohammadi**, **A Fanian**, **TA Gulliver**, "*Fast workflow scheduling for grid computing based on a multi-objective genetic algorithm*", IEEE Pacific Rim Conference on Communications, Computers and Signal Processing (PACRIM), pp. 96-101, 2013.
- **M Sadegh Aliakbarian**, **Ali Fanian**, **Fatemeh Sadat Saleh**, **T Aaron Gulliver**, "*Optimal supervised feature extraction in internet traffic classification*", IEEE Pacific Rim Conference on Communications, Computers and Signal Processing (PACRIM), pp. 102-107, 2013.
- **M Yaghoobi**, **A Fanian**, **H Khajemohammadi**, **TA Gulliver**, "*A non-cooperative game theory approach to optimize workflow scheduling in grid computing*", IEEE Pacific Rim

Conference on Communications, Computers and Signal Processing (PACRIM), pp. 108-113, 2013.

- M Soleimani, A Sharifian, A Fanian, "An energy-efficient clustering algorithm for large scale wireless sensor networks", 21st Iranian Conference on Electrical Engineering (ICEE), pp 1-6, 2013.
- MS Aliakbarian, A Fanian, "Internet traffic classification using moea and online refinement in voting on ensemble methods", 21st Iranian Conference on Electrical Engineering (ICEE), 2013.
- A Karimiafshar, MA Montazeri, M Kalbasi, A Fanian, "Hard Periodic Real-time Task Scheduling on Heterogeneous Processor", The 5th Conference on Information and Knowledge Technology, 2013.
- M. Soleimani, A. Sharifian, A. Fanian , "An Energy-Efficient Clustering Algorithm for Large Scale", 21st Iranian Conference on Electrical Engineering (ICEE), 2013.
- A Fanian, M Berenjkoub, "An efficient end to end key establishment protocol for wireless sensor networks", 9th International ISC Conference on Information Security and Cryptology (ISCISC), pp 73-79, 2012. Information Security and Cryptology (ISCISC)
- A. Fanian, M. Berenjkoub, H. Saidi and T. Aaron Gulliver, "A Scalable and Efficient Key Establishment Protocol for Wireless Sensor Networks", To be presented at IEEE GlobCom, 2010.
- A. Fanian, M. Berenjkoub, H. Saidi and T. Aaron Gulliver, "A New Key Establishment Protocol for Limited Resource Wireless Sensor Networks", Communication Networks and Services Research (CNSR), 2010.
- A. Fanian, M. Berenjkoub, H. Saidi and T. Aaron Gulliver, "A Symmetric Polynomial Based Mutual Authentication Protocol for GSM Networks", IEEE Wireless Communications & Networking Conference, 2010.
- A. Fanian, M. Berenjkoub, H. Saidi and T. Aaron Gulliver, "A Hybrid Key Establishment Protocol for Large Scale Wireless Sensor Networks", IEEE Wireless Communications & Networking Conference, 2010.
- A. Fanian, M. Berenjkoub and T. Aaron Gulliver, "An Efficient Authentication and Key Management Protocol for Hierarchical Ad hoc Sensor Networks", IEEE Wireless Communications & Networking Conference, 2009.
- A. Fanian, M. Berenjkoub and T. Aaron Gulliver, "A new mutual authentication protocol for GSM networks", Electrical and Computer Engineering, CCECE '09, 2009.
- A. Fanian, M. Berenjkoub, "A Symmetric-Based Authentication and Key Management for Hierarchical Ad hoc Sensor Networks", 5<sup>th</sup> International Cryptography Conference (ISCC 2008), October 2008, Iran, Tehran. (Farsi)
- A. Fanian, M. Berenjkoub, "An Efficient Authentication Protocol for Heterogonous Ad Hoc-WLAN Networks", 5<sup>th</sup> International Cryptography Conference (ISCC 2008), October 2008, Iran, Tehran. (Farsi)
- A. Fanian, M. Berenjkoub, "A New Solution to Improve WTLS Protocol", 5<sup>th</sup> International Cryptography Conference (ISCC 2008), October 2008, Iran, Tehran. (Farsi)
- A. Fanian, H. Saidi, M. Berenjkoub, "A New Solution to Channel Assignment in Multi-Channel Wireless Network Base on 802.11", Proceedings of the 16<sup>th</sup> Iranian Conference on Electrical Engineering, 16<sup>th</sup>, 2008, Iran, Tehran. (Farsi)
- A. Fanian, M. Berenjkoub, "Reducing Delay in Decryption Block in Rijdeal Algorithm", 13<sup>th</sup> International CSI Computer Conference (CSICC2008), March 2008. (Farsi)

- M. Fanaei, **A. Fanian** and M. Berenjkoub, "*Tunneling Attack Prevention in endairA*", 13<sup>th</sup> International CSI Computer Conference (CSICC2008), March 2008 (to be published in Springer's Communications in Computer and Information Science (CCIS) series).
- M. Fanaei, M. Berenjkoub and **A. Fanian** "*Resistant TIK-Based endairA against the Tunneling Attack*", 10<sup>th</sup> International Conference on Advanced Communication Technology (ICACT2008), February 2008.
- M. Shikh, **A. Fanian**, A. Sajadieh, P. Khadivi, M. Berenjkoub, "*A Distributed Certificate Authority and Key Establishment Protocol for Mobile Ad Hoc Networks*", IEEE Conference, Advanced Communication Technology, ICAST2008, Korea, 2008.
- M. Shikh, **A. Fanian**, A. Sajadieh, P. Khadivi, M. Berenjkoub, "*A Cluster-based Key Establishment Protocol for Wireless Mobile Ad Hoc Networks*", Iranian Computer Conference, Sharif university. 2008.
- H. Sallie, **A. Fanian**, M. Berenjkoub, "*A TESLA-Based Authentication Protocol for Sensor Networks*", 4<sup>th</sup> International Cryptography Conference (ISCC 2007), Sep. 2007, Iran, Tehran. (Farsi)
- H. Sallie, M. Berenjkoub, **A. Fanian**, "*A New Authentication Protocol for GSM Networks*", 4<sup>th</sup> International Cryptography Conference (ISCC 2007), Sep. 2007, Iran, Tehran. (Farsi)
- **A. Fanian**, M. Berenjkoub, "*A New Security Model for Web Based Application*", Proceedings of the 14<sup>th</sup> Iranian Conference on Electrical Engineering, 16<sup>th</sup>, 2006. (Farsi)
- **Samavi, S., Fanian, A.,** "*Acceleration of Floating Point Addition by Pipeling*", Proceedings of the 12<sup>th</sup> Iranian Conference on Electrical Engineering, pp. 156 to 162, May 2004. (Farsi)