

Curriculum Vitae

-Dr. EHSAN NOWROOZI



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Summary

Brief academic biography

Dr. Ehsan Nowroozi In October 2016, he is selected as a Ph.D. student with the two scholarships at the University of Siena, Italy in information engineering and mathematical sciences, working in the Visual Information Processing and Protection (VIPP) Lab under the supervision of Professor Mauro Barni and he is graduated on 2, April 2020. His Ph.D. thesis was in the field of Adversarial Multimedia Forensics and focuses on the development of machine learning techniques for image and video forensics in the adversarial setting. He has published various papers and a couple of books in the field of multimedia security. His activity focuses on digital image processing and information security, with particular reference to the application of image processing techniques to authentication of

multimedia (multimedia forensics). Also, he has been working on theoretical and practical aspects of adversarial signal processing. During his PhD, he published several papers in Journals and conferences which partially supported by a research sponsored by DARPA and Air Force Research Laboratory (AFRL) of the U.S. government. His professional service and activity as a reviewer of the journal of information security and applications - ELSEVIER from 24th of September, 2017 up to now and reviewer of the Journal Digital Investigation - ELSEVIER from November, 2018 up to now.



Education

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| University of Siena | SIENA, THE ITALY |
| Research Scientist | Apr. 2020 – Present |
| Focussed on Development of machine learning techniques for image forensics in adversarial setting. | |
| University of Siena | SIENA, THE ITALY |
| PhD in Information Engineering and Mathematics | Nov. 2016 – Apr. 2020 |
| Focussed on machine learning techniques for image forensics in adversarial setting. | |
| Supervisor: Dr. Mauro Barni | |
| PhD Thesis . | |
| University of Shahid Beheshti University | TEHRAN, THE IRAN |
| Master of Engineering in Computer Engineering (Computer Architecture) | Jan. 2013 – May. 2015 |
| Double JPEG Compression Detection Using Statistical Analysis. | |
| Supervisor: Dr. Ali Zakerolhosseini | |
| Award: <i>First class and distinction GPA "17.95/20.00"</i> . | |
| Higher Education Institute of Jahad University of Yazd Province (Yazd-ACECR) | YAZD, THE IRAN |
| Bachelor of Engineering in Computer Engineering (Computer Software) | Jan. 2006 – Jul. 2010 |
| Design and Implementation of Checkers Game using Fuzzy Logic. | |
| Supervisor: Dr. FazlAllah Adibniya. . | |
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Awards and Scholarships

PhD scholarships and Grants

- Received research scholarship 15.000€ from the University of Siena for the project Medifor DARPA. (1th November 2019 - 1th November 2020)
- PhD scholarship from the University of Siena (UNISI), Siena, Italy, 2016. [Acceptance letter](#)
- PhD scholarship from the University of Milan-Bicocca, Milan, Italy, 2016. [Acceptance letter](#)
- PhD scholarship from University of Trieste, Italy, 2016. [Web](#)

Awards

- Received student grant 550€ to participate in the 2020 CWMUN NYC to be entirely held in New York City (USA) at the United Nations Headquarters. March 27th, 29th 2020. [Invitational Letter](#)
 - The top-performing (UNISI) detection algorithms from MFC'17. The algorithms test by MediFor DARPA Nimble Challenge Evaluation 2017. (username: mediforBPperf password: firstMedi4Data) [slides](#), [results](#)
 - Ranked 1st in the M.Sc. students at Shahid Beheshti University (SBU), 2015.
 - Awarded Member of Young Researchers and Elite Club, Islamic Azad University North Tehran Branch, Tehran, 2015. [website](#)
 - Achievement of the scientific rank in the graduates' celebrity, Yazd, 2010.
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Professional service and Activity

Journal Reviewer

- Journal of Electronic Imaging – SPIE Digital Library. 11 Nov. 2018 - present [Certificate](#)
- Journal of Digital Investigation – Elsevier. 19 Nov. 2018 - present [Certificate](#)
- Journal of Information Security and Applications – Elsevier. 24 Sep. 2017 - present [Certificate](#)

Conference Reviewer

- The 2nd International Conference on Machine Learning and Intelligent Systems (MLIS2020), South Korea, 2020. [Link](#)

Activity

- Involved in the DARPA MediFor US project, Media Forensics Integrity Analysis program. 1 Sep. 2016 - present [Link](#)
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Research Experiences

Books

- E. Nowroozi, *"A Survey on Digital Image Forensics"*, Da Publishers, ISBN 978-600-7925-53-9, Tehran, 2016. [Persian Language](#)
- E. Nowroozi, *"Passive Detection of Double JPEG Compression"*, Da Publishers, ISBN 978-600-7925-12-6, Tehran, 2015. [Persian Language](#)

Journal Papers

- M. Barni, E. Nowroozi and B. Tondi, *"Improving the Security of Image Manipulation Detection through One-and-a-half-class Multiple Classification"*, An International Journal of Multimedia Tools and Application (Springer), 1th of November, 2019. [Arxiv Paper](#) — [Springer \(MTAP\)](#)
- E. Nowroozi, *"Identification of Double Compressed Medical Images With Manipulation"*, Indian Journal of Fundamental and Applied Life Sciences (ISI), CIBTech, Vol. 5 (S4), pp. 404-416, ISSN 2231-6345, India, 2015. [Paper](#)
- E. Nowroozi and A. Zakerolhosseini, *"Double JPEG Compression Detection Using Statistical Analysis"*, In Advances in Computer Science: An International Journal (ACSIJ), Vol. 4, Issue. 3, No. 15, pp. 70-76, ISSN 2322-5157, Tehran, 2015. [Paper](#)

Conference Papers

- M. Barni, E. Nowroozi, B. Tondi and B. Zhang, "Effectiveness of random deep feature selection for securing image manipulation detectors against adversarial examples.", Accepted paper in 44th International on Acoustics, Speech, and Signal Processing (ICASSP 2020).

- M. Barni, K. Kallas, E. Nowroozi and B. Tondi, "On the Transferability of Adversarial Examples Against CNN-Based Image Forensics", In the 44th International on Acoustics, Speech, and Signal Processing (ICASSP 2019), 12-17 May 2019. [IEEE Xplore](#)

- M. Barni, A. Costanzo, E. Nowroozi, B. Tondi, "CNN-Based Detection of Generic Contrast Adjustment With JPEG Post-Processing", In the IEEE International Conference on Image Processing (ICIP), 7-10 October, Athens, Greece, 2018. [IEEE Xplore](#)

- M. Barni, E. Nowroozi and B. Tondi, "Detection of Adaptive Histogram Equalization Robust Against JPEG Compression", In the 6th IAPR/IEEE International Workshop on Biometrics and Forensics (IWBF), 7-8 June, Sassari, Italy, 2018. [IEEE Xplore](#)

- M. Barni, E. Nowroozi, B. Tondi, "Higher-Order, Adversary-Aware, Double JPEG-Detection via Selected Training on Attacked Samples", In the 25th European Signal Processing Conference (EUSIPCO), 28-August till 2-September, Kos, Greece, 2017. [IEEE Xplore](#)

- E. Nowroozi, "QAM and IQ filtering combination and analyzing its time's optimization in sending and receiving systems", Accepted in the International Conference on Telecom Technology and applications (ICTTA), Sydney, Australia, 2011.

- E. Nowroozi, "Introduction to new methodologies and applications in information Retrieval indexing", In the 2nd International Conference on Mechanical and Electronics Engineering (ICMEE), Kyoto, Japan, 2010. [IEEE Xplore](#)

- E. Nowroozi, "Decoupling Web Services from Active Networks in 16 Bit Architectures", Accepted in the 2nd International Conference on Software Technology and Engineering (ICSTE), San Juan, USA, 2010.

Conference Presentations

- In the IEEE International Conference on Image Processing (ICIP), 7-10 October, Athens, Greece, 2018. [Certificate of Attendance](#)

- In 6th IAPR/IEEE International Workshop on Biometrics and Forensics (IWBF), 7-8 June, Sassari, Italy, 2018. [Certificate of Attendance](#)

- In 25th European Signal Processing Conference (EUSIPCO), 28-August till 2-September, Kos, Greece, 2017. [Certificate of Attendance](#)

PhD Courses, IEEE Schools, E-Learning and Soft Skills

PhD Courses

- **Reinforcement learning**, Prof. Prof. M. Parton Università degli Studi "G. D'annunzio" Chieti-Pescara, June 17-21, 2019.

- **Optimization for learning**, Prof. Anders Hansson University of Linköping Svezia, April 2-11, 2019.

- **Modern C++ for high-performance and effective programming**, Prof. Sandro Bartolini University of Siena, June 18-22, 2018.

- **Cooperative games**, Prof. Vito Fragnelli University of Eastern Piedmont - Department of Advanced Sciences and Technologies, June 11-15, 2018.

- **Algorithms for constrained optimization**, Prof. Veronica Piccialli Università di Roma Tor Vergata, May 22-26, 2017.

- **The design and analysis of algorithms for combinatorial optimization problems**, The design and analysis of algorithms for combinatorial optimization problems Prof. Gilles Schaeffer CNRS, June 5-9, 2017.

- **Machine learning: from shallow to deep architectures**, Prof. Stefano Melacci University of Siena, March 20-24, 2017.

- **Tensor decompositions and their applications**, Tensor decompositions and their applications Prof. Nick Vannieuwenhoven Katholieke Universiteit Leuven, April 26-May 2, 2017.

Organizational skills

- Conference/Event Coordination

Computer Skills

- Keras into Tensorflow (Python)
 - Caffe
 - OpenCV, (Visual Studio)
 - MATLAB, (Image Processing, video Processing, machine learning/deep learning, and Libsvm)
 - C++, (Visual Studio, Eclipse) and C#.Net, (Visual Studio)
 - VHDL, (Modelsim and Xilinx) and MaxPlus, (MuxPlus and Quartus)
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Professional Memberships

International Memberships

- IEEE Membership Certificate, 2019. [Certificate](#)
- Visual Information Processing and Protection (VIIP), Siena, Italy, September 2016 – up to now.
- IEEE SPS – Multimedia Forensics, Membership ID: 94323863, Dec 2017 – up to now.
- EURASIP (European Association for Signal Processing, Membership ID: 8577, Nov 2017 – Dec 2018.
- IEEE Big Data Community, Membership ID: 94323863, 2017-2018.
- IEEE Smart Cities Community, Membership ID: 94323863, 2017-2018.
- IEEE Brain Community, Membership ID: 94323863, 2017-2018.
- IEEE Cybersecurity Community, Membership ID: 94323863, 2017-2018.
- IEEE Signal Processing Society, Membership ID: 94323863, 2017-2018.
- IEEE Student and Young Professionals Member, Membership ID: 94323863, 2017-2018.
- IEEE IRAN Section, 2014 – 2015.
- International Association of Computer Science and Information Technology (IACSIT), 2014 – up to now.

National Memberships

- Computer Society of Iran (CSI), 2014 – 2015.
 - Iranian Society of Machine Vision and Image Processing (ISMVIP), 2014 – 2015.
 - Iranian Association of Information and Communication Technology, 2014 – 2015.
 - Informatics Society of Iran (ISI), 2014 – 2015.
 - Iranian Association of Electrical & Electronics Engineers (IAEEE), 2014 – 2015.
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Research Interests

- Multimedia Forensics (in particular, image forensics)
 - Machine/Deep approaches applied to forensic problems
 - Adversarial Machine Learning
 - Adversarial Multimedia Forensics
 - Biometric Security
 - Hardware cryptography
 - Information security
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Workshops and Seminars

Workshops

- MATLAB Programming workshop at Navid Pars Jonoob Higher Institute, Shiraz, Iran, 2016.
- OpenCV Fundamental workshop at Novin Tarasheh Alborz, Tehran, Iran, 2015.
- Essay Writing workshop at Armook, Tehran, Iran, 2014.
- FPGA Fundamental workshop at Novin Tarasheh Alborz, Tehran, Iran, 2013.
- Excel for Engineers workshop at Industrial Management Institute, Shiraz, Iran, 2013.
- Professional Search in the Internet Workshop at Industrial Management Institute, Shiraz, Iran, 2012.
- Basic Programming of PLCs-PLC211 workshop at Negar Sanat Isatis, Yazd, Iran, 2009.
- Web Pages Design & Editing workshop at Navid Pars Jonoob Higher Education Institute, Shiraz, Iran, 2008.
- Relief & First Aid workshop at Rescue & Relief Organization, Sadoogh, Yazd, Iran, 2008.

International Seminars

- VIPP research group meeting with Prof. Edward Delp, at the University of Siena, 1 April 2019.
 - Unveil Convolutional Neural Networks (CNNs) and Go Beyond, By C.-C Jay Kuo (University of Southern California), At IEEE ICIP 2018, Athens, Greece, 8 October, 2018.
 - Rethinking Convolutional Neural Networks (CNNs), By C.-C Jay Kuo (University of Southern California), At University of Siena, 30 May 2018.
 - Adversarial Machine Learning, By Dr. Ian GoodFellow, ACM Learning Webinar, 24 July, 2018.
 - On stochastic gradient descent, flatness and generalization, By Prof. Yoshua Bengio, University of Siena, Italy, 23 July, 2018.
 - Ethics and etiquette of publication: some dos and don'ts researchers should be aware of, in Auditorium of Santa Chiara Lab, By Prof. Mauro Barni, Siena, Italy, 30 November, 2017.
 - Microsoft University Tour at the University of Siena, Siena, Italy, 23 February, 2017.
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Extracurricular Activities and Interests

Sports

- Table Tennis, Chess, Soccer, Mountain Climbing

Hobbies

- Programming, Books, Movies, Computer Graphics, Music
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References

- Professor Mauro Barni (Ph.D. Supervisor) UNIVERSITY OF SIENA, THE ITALY
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- Professor Fatemeh Saadatjou ART AND SCIENCE UNIVERSITY, THE IRAN
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