

Curriculum Vitae

-Dr. EHSAN NOWROOZI



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Summary

Brief academic biography

Ehsan Nowroozi received a Ph.D. degree from Siena University, Italy. He is an **Assistant Professor** at the Faculty of Computer Engineering at the Bahçeşehir University, Istanbul, Turkey, and a Senior IEEE Member. He was a postdoctoral fellow with the Faculty of Engineering and Natural Sciences (FENS), Center of Excellence in Data Analytics (VERIM), Sabanci University, Istanbul, Turkey 34956, and with the Padua University (SPRITZ Group), Padua, Italy, and a postdoctoral fellow at the Siena University (VIPP Group), Italy 2020 and 2021, respectively. His Ph.D. and a Postdoctoral researcher at Siena University were funded by DARPA,

and a Postdoctoral researcher at Padova University was funded by the STAR program. He is an external collaborator in both universities Siena and Padova, Italy. His main research interest is in the area of Security and Privacy with particular reference to the application of image processing techniques to authentication of multimedia (multimedia forensics), network and internet security, etc. His professional service and activity as a reviewer of the journal IEEE TNSM, IEEE TIFS, IEEE TNNLS, Elsevier journal Digital, EURASIP Journal on Information Security, etc. He is also a member of the IEEE Young Professionals and IEEE Signal Processing Society.

Education

University of Siena

PhD in Information Engineering and Mathematics

Machine Learning Techniques for Image Forensics in Adversarial Setting.

Supervisor: Dr. Mauro Barni

PhD Thesis

Grade: Very Good

PhD Certificate

SIENA, THE ITALY

Nov. 2016 – Apr. 2020

University of Shahid Beheshti University

Master of Engineering in Computer Engineering (Computer Architecture)

Double JPEG Compression Detection Using Statistical Analysis.

Supervisor: Dr. Ali Zakerolhosseini

Award: *First class and distinction GPA "17.95/20.00"* .

TEHRAN, THE IRAN

Jan. 2013 – May. 2015

Art and Science University

Bachelor of Engineering in Computer Engineering (Computer Software)

Design and Implementation of Checkers Game using Fuzzy Logic.

Supervisor: Dr. FazlAllah Adibniya

YAZD, THE IRAN

Jan. 2006 – Jul. 2010

Awards and Scholarships

PhD scholarships and Grants

- Received research scholarship from the University of Siena for the project Medifor DARPA (1th November 2019 - 1th November 2020) [Page 1](#) [Page 2](#)
- 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](#)

PhD cceptance without scholarships

- PhD acceptance from University of Padova, Italy, 2016. [Acceptance letter](#)

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.

Professional service and Activity

Journal Reviewer

- IEEE Transactions on Networks and Service Management, 2022 - present
- IEEE Transactions on Industrial Informatics, 2022 - present
- IEEE Transaction on Neural Networks and Learning Systems, March 2021 - present
- EURASIP Journal on Information Security, June 2020 - present
- 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

- Invited to serve as TPC member for ATC 2021 (2021 The 18th International Conference on Advanced and Trusted Computing).
- Involved in the DARPA MediFor US project, Media Forensics Integrity Analysis program. 1 Sep. 2016 - present [Link](#)

Research Experiences

Book Chapters

- E. Nowroozi, S. Seyedshoari, Y. Mekdad, E. Savas, and M. Conti, "Chapter title: *Cryptocurrency wallets: assessment and security*", Book title: *Blockchain for Cybersecurity in Cyber-physical Systems*, Springer - Advances in Information Security, 2022. [Acceptance Letter](#)
- E. Nowroozi, and Y. Mekdad, "*Detecting High-Quality GAN-Generated Face Images using Neural Networks*", Published at: **Big Data Analytics and Intelligent Systems for Cyber Threat Intelligence**, River Publishers, 2022. [Acceptance Letter](#)

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

- E. Nowroozi, Abhishek, Mohammadreza Mohammadi, Mauro Conti "An Adversarial Attack Analysis on Malicious Advertisement URL Detection Framework", Submitted to IEEE Transactions on Network and Service Management, 2022. [arXiv](#)
- E. Nowroozi, Y. Mekdad, M. Conti, S. Milani, S. Uluagac, and B. Yanikoglu "Real or Virtual: A Video Conferencing Background Manipulation-Detection System", Submitted to Computer & Security - Elsevier Journal, 2022. [arXiv](#)
- E. Nowroozi, M. Conti, Y. Mekdad, M. H. Berenjestanaki, and A. EL. Fergougui, "Demystifying the Transferability of Adversarial Attacks in Computer Networks", In IEEE Transactions on Network and Service Management (TNSM), 2022. [IEEE](#)
- M. Conti, S. Milani, E. Nowroozi, and G. Orazi, "Do Not Deceive Your Employer with a Virtual Background: A Video Conferencing Manipulation-Detection System" [arXiv](#), 2022. [arXiv](#)
- A. Ferreira, E. Nowroozi, M. Barni, "VIPPrint: Validating Synthetic Image Detection and Source Linking Methods on a Large Scale Dataset of Printed Documents", MDPI Journal of Imaging, 8-Mar-2021. [Paper](#), [Dataset](#)
- E. Nowroozi, A. Dehghantanha, R. M. Parizi, and Kim-Kwang R. Choo "A Survey of Machine Learning Techniques in Adversarial Image Forensics", In Computers & Security Elsevier, 2020. [Acceptance](#)
- 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, K. Kallas, E. Nowroozi and B. Tondi, "CNN Detection of GAN-Generated Face Images based on Cross-Band Co-occurrences Analysis", 12th IEEE International Workshop on Information Forensics and Security (WIFS), New York, USA, 6-11 December 2020. [arXiv](#) [Video 8:00min](#) [Video 17:00min](#)
- M. Barni, E. Nowroozi, B. Tondi and B. Zhang, "Effectiveness of random deep feature selection for securing image manipulation detectors against adversarial examples.", In 44th International on Acoustics, Speech, and Signal Processing (ICASSP 2020), Barcelona, Spain. [IEEE Xplore](#), [Certificate](#).
- M. Barni, K. Kallas, E. Nowroozi and B. Tondi, "On the Transferability of Adversarial Examples Against CNN-Based Image Forensics", In the 45th International on Acoustics, Speech, and Signal Processing (ICASSP 2019), 12-17 May 2019, Brighton, UK. [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

- 12th IEEE International Workshop on Information Forensics and Security (WIFS), New York, USA, 6-11 December 2020. [Video 8:00min](#) [Video 17:00min](#)

- 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 Linkoping 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.

IEEE Schools

-IEEE- EURASIP Summer School on Signal Processing for Autonomous Systems (SP-AS), 9-13 September 2019. [Website of School](#)

- IEEE-EURASIP Summer School on Signal Processing (S3P-2018), San Vincenzo, September 10-14, Italy. [S3P-Examination Certificate](#), [S3P-Certificate of Participation](#)

- IEEE-EURASIP Summer School on Signal Processing (S3P-2017), Capri, September 4-8, Italy. [Certificate of Participation](#)

Soft Skills

- **Scientific Writing and Presentation**, Prof. John L. Telford, held at the University of Siena, 12-14 Feb. 2018.

E-Learning

-Blockchain Basics, Coursera , University of Buffalo, 7,March,2021. [Certificate](#)

-Decision Trees, Random Forests, AdaBoost & XGBoost in Python, Udemy, Jan 2020. [Certificate](#)

-Penetration Testing, Incident Response and Forensics, Coursera IBM, 29, November 2020. [Certificate](#)

-Introduction to Cybersecurity Tools & Cyber Attacks, Coursera IBM, 23 November 2020. [Certificate](#)

-Artificial Intelligence for Cybersecurity, Linkedin, 30 October 2020. [Certificate](#)

-Linux Foundation Cert Prep: Essential Commands (Ubuntu), Linkedin, 29 September 2020. [Certificate](#)

-Learning Ubuntu Desktop Linux, Linkedin, 24 September 2020. [Certificate](#)

- Network Forensics, Liknedin, 22 September 2020. [Certificate](#)
- Learning Python, Linkdin, 20 September 2020. [Certificate](#)
- Intermediate Python for Data Science Course, DataCamp, License Number, #2,748,798, November, 2018. [Certificate](#)
- Deep Learning with TensorFlow, IBM Cognitive Class, License Number, ML0120EN, 06 Februrary, 2018. [Certificate](#)
- Deep Learning in Python Course, DataCamp, License Number, #3,219,896, January, 2018. [Certificate](#)
- Intro to Python for Data Science, DataCamp, License Number, #2,720,972, March, 2017. [Certificate](#)

Work Experience

<p>Bahçeşehir University Assistant Professor, Computer Engineering Department Cybersecurity</p>	<p>ISTANBUL, THE TURKEY <i>Oct. 2022 - Present</i></p>
<p>Sabancı University Scientific Researcher at the Data Analytics Center of Excellence (VERİM), Faculty of Engineering and Natural Sciences (FENS) Machine and Deep Learning Security.</p>	<p>ISTANBUL, THE TURKEY <i>Feb. 2022 - Sep. 2022</i></p>
<p>University of Padova Post doctoral Fellow at Security & Privacy Research Group SPRITZ Security the Transition Toward the Future Internet. Certificate Supervisor: Professor Mauro Conti</p>	<p>PADOVA, THE ITALY <i>Mar. 2021 - Feb. 2022</i></p>
<p>University of Siena Post doctoral Fellow at the Visual Information Processing and Protection VIPP Development of Machine Learning Techniques for Image Forensics in Adversarial Setting. Page 1 Page 2 Supervisor: Mauro Barni</p>	<p>SIENA, THE ITALY <i>Apr. 2020 – Mar. 2021</i></p>
<p>Young Researchers Elite Club (Part-time) Researcher Young Researchers and Elite Club, Islamic Azad University – Tehran North Branch</p>	<p>TEHRAN, THE IRAN <i>Oct. 2015 – present</i></p>
<p>Manufacture Planning Expert (Full-time) Manufacture Planning with MS Project Software Iran Patcel Company (PJS)</p>	<p>TEHRAN, THE IRAN <i>Oct. 2013 – Nov. 2014</i></p>
<p>Network Administrator (Full-time) Network Management Software and Hardware Hamrah Ofogh Company (HOT) (PJS)</p>	<p>TEHRAN, THE IRAN <i>Jun. 2012 – Oct. 2012 and Feb. 2013 – Mar. 2013</i></p>

Teaching Experience

<p>Instructor Macquarie University - Machine learning techniques for image forensics in adversarial setting Certificate</p>	<p>SYDNEY, THE AUSTRALIA <i>May 18th ,2021</i></p>
<p>Instructor National Iranian Oil Co. (NIOC) Iranian Central Oil Fields Co. (ICOFC) South Zagros Oil and Gas Production Co. (SZOGPC) (PJS) - Application of MATLAB Software in Engineering (32 hours) - Application of EXCEL Software in Engineering (40 hours) - C++ Programming (30 hours) - Microsoft Office</p>	<p>SHIRAZ, THE IRAN <i>May 2015 – Feb. 2016</i></p>

PERSONAL SKILLS

Language Skills

- **Farsi (Persian):** Mother tongue
- **Turkic (Qashqai):** Mother tongue
- **Turkic (Istanbul):** Intermediate
- **English:** Advanced
- **Italian:** Beginner

Communication Skills

- Excellent presentation and negotiation skills.
- Confident, articulate, and professional speaking abilities.
- Thrive in a team environment and work well with others.
- Enjoy working as a team member as well as independently.
- Team player.
- Highly analytical thinking with demonstrated talent.
- Innovative problem-solver who can generate workable solutions.

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

- Senior IEEE Member. Aug. 2022.
- IEEE Membership Certificate, 2019. [Certificate](#)
- Visual Information Processing and Protection (VIPP), 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 and Webinars

- Mitacs Virtual Interaction Webinar (Canada), May 23, 2020. [Slides](#), and [Video](#)
- 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.

Extracurricular Activities and Interests

Sports

- Table Tennis, Chess, Soccer, Mountain Climbing

Hobbies

- Programming, Books, Movies, Computer Graphics, Music

References

Professor Mauro Barni (My Ph.D. and First Postdoctoral Supervisor) UNIVERSITY OF SIENA, THE ITALY

Full Professor

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Professor Mauro Conti (My Second Postdoctoral Supervisor)

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Full Professor

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Doctor Benedetta Tondi

Post doctoral fellow

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SHAHID BEHESHTI UNIVERSITY, THE IRAN

Professor Fatemeh Saadatjou

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ART AND SCIENCE UNIVERSITY, THE IRAN