



SERENA NICOLAZZO

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CURRENT POSITION

- November 2020 – Now Daisy Lab, Marche Polytechnic University
External Research Collaborator
I collaborate with Daisy Lab team to further my research on Data Science, Online Communities and IoT.
- March 2020 – Now Middlesex University, Faculty of Science & Technology
Visiting Researcher
I collaborate with Middlesex team to further my research on Data Science and Artificial Intelligence applied to Sharing Economy.
- September 2021 – Now I.I. S "Curie - Sraffa" – Milan
Computer Science High School Teacher

PREVIOUS POSITIONS

- July 2019 – August 2021 Sky Italy Srl
Research Engineering Senior Engineer
Architecture&KPI group. I collaborate with the Innovation Group for research and innovation projects (H2020, POR, MISE). I am responsible for the design of architectures and Key Performance Indicators for the monitoring of Sky products, services and tech platform.
- October 2017 - July 2019 Sisal SPA.
Software Architect Innovative Solutions
Payment and Services Unit. I was responsible for the design and architectural vision and for technical implementation of the Digital Factory projects, with focus on the back-end side of the systems.
- January – October 2017 University Mediterranea of Reggio Calabria, DIIES Department.
Research Fellow
Project Title: Innovative Models and Techniques for Information protection and integrity in dematerialization scenarios.

Brief Synopsis:

- Fall 2013 – Winter 2017 University Mediterranea of Reggio Calabria, DIIES Department.
PhD in Computer Engineering (Funded by Miur)
Thesis Title: Organizations and communities: trust, security, and privacy issues
Supervisor: Professor F. Buccafurri
- Oct 2011 – July 2013 University Mediterranea of Reggio Calabria,
MSc in Computer and Telecommunication Systems Engineering (110 summa cum laude/110)
- Oct 2007 – May 2011 University Mediterranea of Reggio Calabria,
BSc in Telecommunication Engineering (110 summa cum laude/110)
- Fall 2020 – Fall 2023 (expected) Università degli Studi di Milano Statale
BSc in Sciences of the Cultural Heritage

QUALIFICATIONS: CISCO (I, II modules) (2011)
Licensed as a Professional Engineer (2013)
Cambridge C1 Advanced (CAE) Level (2020)

RESEARCH METRICS

The following are the bibliometric indicators according to Google Scholar and Scopus:

| | Publications | Citations | H-Index |
|---------|--------------|-----------|---------|
| Scopus | 37 | 286 | 9 |
| Scholar | 37 | 415 | 11 |

MAIN PROTOTYPES

- Multi-Social Networks Centrality Prototype. It allows the computation of the classical centrality measures and CBC using both real Web data and synthetic data drawn via GUI. Integrated a C module based on i-graph library into the Java prototype to optimize execution time.
- Privacy-Preserving Approach based on k-anonymity Prototype. It adopts a multi-threading strategy and different mobility models for people.
- T2S: Electronic Signature Through Twitter. J2EE prototype implementing the lightweight e-signature protocol on top of Twitter features. Handled Twitter API and HTML parsing for integration with Twitter services.
- IOT Interest Assortativity Prototype. It computes interest assortativity on an Internet of Thing dataset relying on Neo4J graph database.
- Airbnb data extractor. It extracts data from Airbnb using both Airbnb API and HTML Scraping.

PROJECTS

- Cyber Security - Project 2: Digital Services and e-Payment Protection; Project 3: Secure Dematerialization. A project of the Programma Operativo Nazionale (PON) Ricerca e Competitività 2007-2013 made in collaboration with Poste Italiane

SpA, Postel SpA, NTT Data Italia SpA, Abramo Printing & Logistics SPA, Centro di Competenza ICT-SUD Srl, NOVA System ROMA srl, University of Calabria, ICAR-CNR. The project started on October 2013.

- PRIN TENACE - Protecting National Critical Infrastructures from Cyber Threats. A project made in cooperation with University of: Rome La Sapienza, Parthenope of Naples, Federico II of Naples, Politecnico of Milano, Trento, Florence, Politecnico di Torino, Pisa, and ICAR-CNR. The project has been carried out from February 2013 to January 2016.
- inMoto - Information MObility for Tourism. A project of the Programma Operativo Nazionale (PON) Ricerca e Competitività 2007-2013 made in collaboration with ACI Informatica, TSC Consulting, Engineering, University of Calabria, ICAR-CNR, University Magna Graecia of Catanzaro. The project has been carried out from April 2013 to December 2015.
- BA2Know - Business Analytics to Know. Iniziativa del SI_Lab Calabria, made in collaboration with: Engineering, Exeura, University of Calabria, ICAR CNR, Omnia Energia, DLVSystem. The project has been carried out from September 2013 to December 2016.

TEACHING EXPERIENCE

- Head teaching assistant: planned and taught a module of Algorithms & Data Structures for the second year of BSc in Information Engineering at University Mediterranea of Reggio Calabria from 2014/15 to 2016/17.
- Member of Computer Engineering Exam Commission at University Mediterranea of Reggio Calabria from 2014 to 2017.
- Presented a paper at the 13th International Conference on Ontologies, DataBases, and Applications of Semantics (ODBASE 2014), Amantea, Italy, October 27-31, 2014.
- Planned, wrote and led a computer science course (30 hours) at ITS: "Tecnico Superiore per l'Infomobilità e le infrastrutture logistiche". ITS "PEGASUS" Via dello Sport, n. 25, 89024 Polistena, Reggio Calabria, Italy, October 23 – January 21.
- Held a seminar on "Social Network and Privacy Issues" for Social Sciences High School "T.Gulli" Reggio Calabria – May 2014.
- Held a course entitled "Security, Privacy and Trust in the IoT" as part of the PhD Course in Information Engineering, in April 2021, at the Polytechnic University of Marche,
- Supported students' research activities for thesis.

SKILLS

Programming Languages, Technologies and Networking Protocols

- Java; C/C++; Python; SQL; XML/XSD; JSP; UML; HTML; Linux Bash-Scripting; Android; PHP; Cloud Architecture.
- Eclipse; Gnuplot; MySQL; Oracle; R-Project; Matlab; Ns2; R; ODI, AWM, Weka, Knime, Neo4J, AWS, Google Cloud Platform, BigQuery.
- TCP/IP, WiFi 802.11, Bluetooth, AODV, GPRS, UMTS.

Communications

- Worked closely with research colleagues, department staff and external contacts, such as: Ensicaen (National school of engineering "E-payment & Biometrics" research unit), Parthenope University of Naples (Information Security research unit), Politecnico di Torino (Computer-Human Interaction research unit), Salento University (Database and Cloud research unit), Insubria University (Theoretical and Applied Sciences Department), UCL (University college of London – Computer Science Department), Middlesex University of London and Università Politecnica delle Marche (Daisy Lab).
- Made presentations to both academic and non-specialist audiences.

Positions of Responsibility

- Supported students' research activities for master thesis.
- Editorial Board Member of Experimental Results, Cambridge University Press.
- Editorial Board Member of International Journal of Information Technologies and Systems Approach (IJITSA).
- Editorial Board Member of International Journal of Advanced Computer Science and Applications (IJACSA).

- Editorial Board Member of Journal of Computer Science.
- Editorial Board Member of Journal of Intelligent Systems (JISYS).
- Editorial Board Member of American Journal of Electrical and Computer Engineering (AJOECE).
- Member of the Technical Program Committee (TPC) of the 2017 International Conference on Computer Science and Application Engineering (CSAE 2017); of The Ninth International Conferences on Pervasive Patterns and Applications (PATTERNS 2017); of the 7th International Conference Sciences of Electronics, Technologies of Information and Telecommunications (SETIT 2017); the 8th International Conference on Electronics, Communications and Networks (CECNet 2018) and the Mosharaka International Conferences.
- Referee for the 24th and 25th Italian Symposium on Advanced Database Systems (SEBD 2016, SEBD 2017); for the 6th International Conference on Electronics, Communications and Networks (CECNet 16); for the First Italian Conference on Cyber Security (ITA-SEC 2017); for the 3rd International Conference on Information Systems Security and Privacy (ICISSP 2017); and for the 12th International Conference on Availability, Reliability and Security (ARES 2017).
- Reviewer for Information Sciences, World Scientific and Engineering Academy and Society (WSEAS), Future Generation Computer Systems and Computer Communication & Collaboration Journal, Computer in Human Behaviour.

CONFERENCES ATTENDED

- 38th Annual International Computers, Software & Applications Conference (COMPSAC14), Västerås, Sweden, July 21-25, 2014.
- 13th International Conference on Ontologies, DataBases, and Applications of Semantics (ODBASE 2014), Amantea, Italy, October 27-31, 2014.

INTERNATIONAL PHD SCHOOL ATTENDED

- Infosec 2015 - International Summer School on Information Security. July 6-10, 2015. Bilbao, Spain.
- SecureCI 2016 - Winter School: Securing Critical Infrastructures. January 17-21, 2016. Cortina D'amezzo, Italy.

FUNDING AND AWARDS

- Member of "Security, Trust & Social Networks (STS) Group", part of CINI (Cyber Security National lab) 2015-2017.
- Responsible for the submission of "Imperium, Immersive MultiPlatform Media Content interaction" HORIZON 2020 ICT-44 proposal for the Sky research team. Project proposal in collaboration with: Atos Spain, Engineering, RAI SPA IT, SWISS TXT, University Polytechnical De Madrid; University of Southampton, University of Pavia, Kpeople Research Foundation. Submitted on 16th January 2020.
- Top 3 national finalist for the Golden Apple - Prize Marisa Bellisario 2014- category IT engineering graduates.

PUBLICATIONS

Authorship in alphabetical order.

Journals

1. F. Buccafurri, G. Lax, **S. Nicolazzo**, and A. Nocera. Comparing Twitter and Facebook User Behavior: Privacy and other Aspects. *Computers in Human Behavior*, Elsevier. n. 52, 2015, pp. 87-95, ISSN: 0747-5632.
2. F. Buccafurri, G. Lax, **S. Nicolazzo**, and A. Nocera. A Model to Support Design and Development of Multiple-Social- Network Applications. *Information Sciences*, Elsevier. 331 (2016): 99-119 n. 331, 2016, ISSN: 0020-0255.
3. F. Buccafurri, G. Lax, **S. Nicolazzo**, and A. Nocera. A Privacy-Preserving Localization Service for Assisted Living Facilities. *IEEE Transactions on Services Computing (TSC)*, IEEE Computer Society Vol.9. 2017.
4. F. Buccafurri, G. Lax, **S. Nicolazzo**, and A. Nocera. A System for Privacy-Preserving Access Accountability in Critical Environments. *IEEE Pervasive Computing*, 2019, 18.2: 58-66.
5. **S. Nicolazzo**, A. Nocera, D. Ursino and L. Virgili. A privacy-preserving approach to prevent feature disclosure in an IoT scenario. *Future Generation Computer Systems*, 105:502-519, 2020.
6. M. Ferretti, **S. Nicolazzo** and A. Nocera. H2O: Secure interactions in IoT via Behavioral Fingerprinting. *Future Internet*. 2021.
7. **S. Nicolazzo**, A. Nocera and D. Ursino. Anonymous Access Monitoring of Indoor Areas. *IEEE Access*, 2021, 9: 56664-56682.
8. E. Corradini, **S. Nicolazzo**, A. Nocera, D. Ursino and L. Virgili. A two-tier Blockchain framework to increase protection and autonomy of smart objects in the IoT. *Computer Communications*. 2022, 181, pp. 338–356.
9. M. Arazzi, **S. Nicolazzo** and A. Nocera. The role of social media on the evolution of companies: A Twitter analysis of Streaming Service Providers. *Online Social Networks*. *Under Revision*.
10. M. Arazzi, **S. Nicolazzo**, A. Nocera and Manuel Zippo. The Importance of the Language for the Evolution of Online Communities: An Analysis Based on Twitter and Reddit. *Expert Systems With Applications*. *Under Revision*.
11. M. Arazzi, **S. Nicolazzo** and A. Nocera. A Novel IoT Trust Model Leveraging Fully Distributed Behavioral Fingerprinting and Secure Delegation. *Pervasive and Mobile Computing*. *Submitted*.

Conferences

1. G. Quattrone, **S. Nicolazzo**, A. Nocera, D. Quercia, and L. Capra. Is the sharing economy about sharing at all? A linguistic analysis of Airbnb reviews. *In Proc. of International AAAI Conference on Web and Social Media (ICWSM 2018)*, Palo Alto, California, USA, June 25-28, 2018.
2. F. Buccafurri, G. Lax, **S. Nicolazzo**, A. Nocera, and D. Ursino. Driving Global Team Formation in Social Networks to Obtain Diversity. *In Proc. of the International Conference on Web Engineering (ICWE 2014)*, Toulouse, France, Vol. 8541, 2014, pp. 410-419.
3. F. Buccafurri, G. Lax, **S. Nicolazzo**, and A. Nocera. A Privacy-Preserving Solution for Tracking People in Critical Environments. *In Proc. of International Workshop on Computers, Software and Applications (COMPSAC'14)*, Vasteras, Sweden, July 21-25, 2014. pp. 146-151.
4. F. Buccafurri, G. Lax, **S. Nicolazzo**, and A. Nocera. A Model Implementing Certified Reputation and its Application to TripAdvisor. *In Proc. of International Conference on Availability, Reliability and Security (ARES 2015)*, Toulouse, France, August 24-28, 2015, pp. 218-223.
5. F. Buccafurri, G. Lax, **S. Nicolazzo**, and A. Nocera. Accountability-Preserving Anonymous Delivery of Cloud Services. *In Proc. of 12th International Conference on Trust, Privacy & Security in Digital Business (TrustBus2015)*, Valencia, Spain, September 1-2, 2015. pp. 124-135.
6. F. Buccafurri, G. Lax, **S. Nicolazzo**, and A. Nocera. Range Query Integrity in Cloud Data Streams with Efficient Insertion. *In Proc. of the 15th International Conference on Cryptology and Network Security (CANS 2016)*. Milan, Italy. November 14-16, 2016. pp. 719-724.

7. F. Buccafurri, G. Lax, **S. Nicolazzo** and A. Nocera. Tweetchain: An Alternative to Blockchain for Crowd-Based Applications. *In Proc. of the International Conference on Web Engineering (ICWE 2017)*, Rome, Italy. June 5-8, 2017.
8. F. Buccafurri, G. Lax, **S. Nicolazzo** and A. Nocera. Overcoming Limits of Blockchain for IoT Applications. *In Proc. of the 12th International Conference on Availability, Reliability and Security (ARES 2017)*. Reggio Calabria, Italy. August 29 - September 1, 2017.
9. F. Buccafurri, G. Lax, D. Migdal, **S. Nicolazzo**, A. Nocera and C. Rosenberger. Contrasting False Identities in Social Networks by Trust Chains and Biometric Reinforcement. *In Proc. of the 2017 International Conference on Cyberworlds (CW2017)*. Chester, United Kingdom. September 20-22, 2017.
10. F. Buccafurri, G. Lax, **S. Nicolazzo**, and A. Nocera. Fortifying TripAdvisor against Reputation-System Attacks. *In Proc. of the World Congress on Internet Security (WorldCIS-2014)*, London, UK. December 8-10, 2014. pp. 21-22.
11. F. Buccafurri, G. Lax, **S. Nicolazzo**, and A. Nocera. Interest Assortativity in Twitter. *In Proc. of 12th International Conference on Web Information Systems and Technologies (WEBIST2016)*. Rome, Italy. April 23-25, 2016, pp. 239-246.
12. F. Buccafurri, G. Lax, **S. Nicolazzo**, and A. Nocera. A Model to Support Multi-Social-Network Applications. *In Proc. of the International Conference on Ontologies, Databases and Applications of SEMantics (ODBASE '14)*, Amantea, Italy, October 27-31, 2014. Springer Berlin / Heidelberg, pp. 639-656.
13. F. Buccafurri, G. Lax, L. Fotia, **S. Nicolazzo**, and A. Nocera. A new approach for electronic signature. *In Proc. of 2nd International Conference on Information Systems Security and Privacy (ICISSP2016)*. Rome, Italy. February 19-21, 2016, pp. 440-447.
14. F. Buccafurri, G. Lax, **S. Nicolazzo**, and A. Nocera. A Middleware to Allow Fine-Grained Access Control of Twitter Applications. *In Proc. of International Conference on Mobile, Secure and Programmable Networking (MSPN'2016)*. Paris, France. June 1 - 3, 2016.
15. F. Buccafurri, G. Lax, **S. Nicolazzo**, and A. Nocera. A Threat to Friendship Privacy in Facebook. *In Proc. of the International Cross Domain Conference and Workshop (CD-ARES 2016)*. Salzburg, Austria. August 31 - September 2, 2016, Vol. 9817, pp. 96-105.
16. F. Buccafurri, G. Lax, **S. Nicolazzo**, and A. Nocera. Range Query Integrity in Cloud Data Streams with Efficient Insertion. *In Proc. of the 11th International Conference for Internet Technology and Secured Transactions (ICITST-2016)*. Barcelona, Spain. December 5-7, 2016.
17. F. Buccafurri, G. Lax, **S. Nicolazzo**, A. Nocera, A. Matassa and L. Console. Discovering good links between objects in the Internet of Things. *In Proc. of the International Conference on Wireless Networks and Mobile Systems (WINSYS 2017)*, Madrid, Spain. July 24-26, 2017.
18. F. Buccafurri, G. Lax, **S. Nicolazzo**, and A. Nocera. Generating K-Anonymous Logs of People-Tracing Systems in Surveilled Environments. *In Atti del Ventiduesimo Convegno Nazionale su Sistemi Evoluti per Basi di Dati (SEBD 2014)*, Sorrento Coast, Italy. June 16-18, 2014. pp. 37-44.
19. F. Buccafurri, G. Lax, L. Fotia, **S. Nicolazzo**, and A. Nocera. A lightweight electronic signature scheme using Twitter. *In Proc. of 23rd Italian Symposium on Advanced Database Systems (SEBD 2015)*, Gaeta, Italy, June 14-17, 2015 pp. 160-167.
20. F. Buccafurri, G. Lax, **S. Nicolazzo**, and A. Nocera. Completeness, Correctness and Freshness of Cloud-Managed Data Streams. *In Proc. of 24th Italian Symposium on Advanced Database Systems (SEBD 2016)*. Ugento, Lecce, Italy. June 19-22, 2016. pp. 134-141.
21. F. Buccafurri, G. Lax, **S. Nicolazzo**, and A. Nocera. Smart Communities and the Cloud: Security and Privacy Issues. *In Proc. of the 2nd CINI Annual Conference on ICT for Smart Cities & Communities (I-Cities 2016)*. Benevento, Italy. September 29 -30, 2016.
22. G. Lax, F. Buccafurri, **S. Nicolazzo**, A. Nocera and F. Ermidio. A system for privacy-preserving analysis of vehicle movements. *In Proc. of the 2nd EAI International Conference on ICT Infrastructures and Services for Smart Cities (IISCC2017)*. Brindisi, Italy. April 20-21, 2017.
23. F. Buccafurri, G. Lax, **S. Nicolazzo**, A. Nocera, and D. Ursino. Measuring Betweenness Centrality in Social Internetworking Scenarios. *In Proc. of International Workshop on Social and Mobile Computing for collaborative environments (SOMOCO'13)*, Gratz, Austria, 2013. Springer Verlag. pp. 666-673.

24. F. Buccafurri, L. Fotia, G. Lax, **S. Nicolazzo** and A. Nocera Trust, Security and Privacy in Smart Cities. *I-CiTies 2015 CINI Annual Workshop on ICT for Smart Cities & Communities*. Palermo, Italy. October 29-30, 2015.
25. F. Buccafurri, G. Lax, **S. Nicolazzo** and A. Nocera. Range Query Integrity in Cloud Data Streams with Efficient Insertion. *In Proc. of the Italian Conference on Cybersecurity (ItaSec2017)*. Venice, Italy. January 17-20, 2017.
26. F. Buccafurri, G. Lax, **S. Nicolazzo** and A. Nocera. eIDAS Public Digital Identity Systems: Beyond Online Authentication to Support Urban Security. *In Proc. of the 2nd EAI International Conference on ICT Infrastructures and Services for Smart Cities (IISCC2017)*. Brindisi, Italy. April 20-21, 2017.
27. F. Buccafurri, G. Lax, **S. Nicolazzo**, and A. Nocera. A Model for Handling Multiple Social Networks and its Implementation. *In Proc. of 25th Italian Symposium on Advanced Database Systems (SEBD 2017)*. Squillace Lido, Catanzaro, Italy. June 25-29, 2017.
28. F. Buccafurri, G. Lax, **S. Nicolazzo** and A. Nocera. Not Only Databases: Social Data and Cybersecurity Perspective. *In Proc. of 25th Italian Symposium on Advanced Database Systems (SEBD 2017)*. Squillace Lido, Catanzaro, Italy. June 25-29, 2017.
29. F. Buccafurri, V. De Angelis, G. Lax, **S. Nicolazzo** and A. Nocera. (2018). The challenge of privacy in the cloud. In Shoba Ranganathan, Michael Gribskov, Kenta Nakai, and Christian Schnbach, editors, *Encyclopedia of Bioinformatics and Computational Biology*, pages 265 - 271. Academic Press, Oxford, 2019.
30. E. Corradini, **S. Nicolazzo**, A. Nocera, L. Virgili, D. Ursino. Increasing protection and autonomy in IoT through a two-tier blockchain. *In Proc. of 29th Italian Symposium on Advanced Database Systems (SEBD 2021)*. Pizzo Calabro, Vibo Valentia, Italy. September 5-9, 2021.

Milano, 22 September 2022

