Curriculum Vitae

Assistant Professor
Computer Science and Engineering
Mississippi State University
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Education

- **Ph.D. in Computer Science and Automation Engineering**,
  2015, *University of Rome, Tor Vergata*
- **M.Eng. in Computer Engineering**, achieved with summa cum laude in 2009, *University of Rome, Tor Vergata*
- **B.Eng. in Computer Engineering**, achieved in 2006, *University of Rome, Tor Vergata*

Summer schools

- COST Action 'ACROSS' Summer School NFV meets Big Data: Architecture and Performance Evaluation, 2015, Wurzburg (Germany)

- GII Doctoral School. Future Internet and Global Computing: Services, Architectures, Models and Performance Evaluation, 2012, Lucca (Italy)

- CONTRAIL Summer School on Cloud and Grid Computing, 2011, Hyereles-Palmiers (France)

- 10th International School on Formal Methods for the Design of Computer, Communication and Software Systems: Quantitative Aspects of Programming Languages (SFM-10 QAPL), 2010, Bertinoro (Italy)

Research Interests

- Autonomic Cyber-Security

- Adaptive and Self-Managed Systems

- Cloud Computing and Service Oriented Systems

Appointments

- Assistant Professor, Computer Science and Engineering Department, Mississippi State Department, August 2017 - present

- Affiliate Member, Center for Cyber Innovation, Mississippi State University, August 2017 – present

- Assistant Research Professor, Distributed Analytics and Security Institute, Mississippi State University, August 2016 – July 2017

- Postdoctoral Associate, Distributed Analytics and Security Institute, Mississippi State University, September 2015 - August 2016

- Co-founder and CTO, Grep srl, 2012 - 2015

- Founder and CEO, chmod srl, 2010-2013
- Research Assistant and System Administrator, University of Rome Tor Vergata, 2009-2015

Honors and Awards
- Best paper award at IEEE 6th International Symposium on Service Oriented Systems (SOSE 2011)
- 100K Euro award for a project submitted to POR FESR Lazio 2007/2013 FILAS SO 2011-1046.

Projects
I am or have been involved in the following projects:

- Principal Investigator
  - Global Discovery Seed Grant Program (January 2018 – December 2018). "Autonomic Security for Next Generation Health Care Systems"
    Funded with $15,000
  - Pacific Northwest National Laboratory (PNNL) High Performance Data Analytics (August 2016 - May 2017). "Application-specific Benchmarking for Big Data Analytics".
    Funded with $500,000
- Co-Principal Investigator and Technical Lead
  - US Army Corps of Engineers, Engineer Research and Development Center (August 2017 – April 2020), "Dynamic Defense Strategy Planning for Research and Development and Infrastructure Networks".
    Funded with $1,312,315
- Senior Personnel
  - Pacific Northwest National Laboratory (PNNL) Idaho Bailiff (May 2015 - August 2016). "Probabilistic Security Assessment and Protection".
  - Qatar National Research Foundation, NPRP9–005–1002. "Assessing and managing ICT security risks of industrial controls systems for oil and natural gas production and transmission".

Teaching Experience
- MSU - CSE 8990 Special Topics on Autonomic Cyber-Security (Spring 2018)
- MSU - CSE 4243/6243 Information and Computer Security (Fall 2017, Fall 2018)
- MSU - CSE 4253/6253 Secure Software Engineering (Fall 2018)
- I taught seminars in the master degree "Distributed Systems and Cloud Computing" class: Service Oriented Architecture (SOA), Web Services, Business Process Execution Language (BPEL), Enterprise Service Bus (ESB), Cloud Computing Infrastructures, pthread Parallel Programming.
- I taught seminars in the bachelor degree "Web Engineering" and "Programming Fundamentals" classes" Service Oriented Architecture (SOA), Web Services, C++
- I taught classes of operating systems, private Infrastructure as a Service design and administration (160 hours), Service Oriented Systems, Java programming for private clients.

Professional Activities

I am or have been:

- Site director at MSU for the NSF IUCRC "Center for Cloud and Autonomic Computing" (CAC) – 2017 - 2018
- NSF Panelist - 2018
- Guest Editor for a special issue on Cloud and Autonomic Computing, Springer Cluster Computing journal – 2018
- Co-Chair of the International Workshop on Container-based Systems for Big Data, Distributed and Parallel computing – 2017 (co-located with IEEE ICCAC 2017)
- Co-Chair of the International Workshop on Container-based systems for Big data, Distributed and Parallel computing (CBDP'2018, co-located with EuroPar 2018)
- Editor of the Proceedings of the International Workshop on Container-based Systems for Big Data, Distributed and Parallel computing – 2018
- Workshops chair for the IEEE International Conference on Cloud and Autonomic Computing (ICCAC 2017)
- Program Chair for the IEEE 12th Workshop on Feedback Computing - 2017

I have been a visiting professor and gave invited talks at:

- Department of Civil Engineering and Computer Science Engineering, University of Rome Tor Vergata, Rome, Italy, March 2nd – 16th, 2018
- Department of Computer Science and Engineering, Blekinge Institute of Technology, Karlskona, Sweden, May 20th – 26th, 2018

I have been a keynote or distinguished speaker at:

- NIST Cybersecurity Risk Management Conference – November 2018
- IEEE Confluence – January 2019

I contribute to the research community by reviewing papers for journals and conferences. I am or have been PC member of:

- IEEE UEMCON 2018
- ACPROSS 2017 - International Workshop on Autonomous Control for Performance and Reliability Trade-offs in Internet of Services (ACPROSS 2017)
- 1st International Workshop on Autonomic Management of Large Scale Container-Based Systems (AMLCS 2017)
- The sixth Workshop of the Italian group on Quantitative Methods in Informatics (InfQ 2016)

I serve as a reviewer for:

- IEEE Transactions on Cloud Computing
- IEEE Transactions on Software Engineering
- Elsevier Journal of Network and Computer Applications
- Elsevier Ad Hoc Networks Journal
- 10th IEEE International Conference on Self-Adaptive and Self-Organizing Systems (SASO 2016)
- 2016 IEEE International Conference on Cloud and Autonomic Computing (ICCAC 2016)

I gave invited speeches or seminars to:

- University of Rome "Tor Vergata", March 2018
- Blekinge Institute of Technology, May 2018
- Kiwanis Association, Tupelo, MS, December 2017
- Class of "History of Technology in Six Objects", Department of History, Mississippi State University, October 2017

Industry Experience

I was the founder and CEO of the company *chmod srl* (2010-2013). My professional activities in this company, among the others, regarded:

- Coordination of several projects aimed at free software diffusion into enterprises and public administrations
- Consultancy activities for design and implementation of distributed systems based on GNU/Linux
- Consultancy activities for monitoring and sizing of distributed systems
- Teaching activities for 7 courses on GNU/Linux system administration, Service Oriented Architectures (SOA) and Java Programming Language.

I was one of the co-founders, and CTO of the company *grep srl* (2012-2015)*. I submitted a project proposal to POR FESR Lazio 2007/2013 FILAS SO 2011 - 1046 and I was granted with 100K Euro for the creation of a start-up company. This project regarded the design, realization and commercialization of a public Desktop as a Service (DaaS) cloud provider. The resulting company works actively both in the enterprise and research fields and in 2015 published a paper regarding the workload characterization for a cloud DaaS provider (IEEE 3rd International Conference on Cloud Engineering, Tempe, AZ, March 2015).

Publications

Journal Papers

- J4 – S. Iannucci, S. Abdelwahed, A. Montemaggio, M. Hannis, L. Leonard, J. King, J. Hamilton, "A Model-Integrated Approach to Designing Self-Protecting Systems", IEEE Transactions on Software Engineering (TSE). To appear in 2019.
- J3. S. Iannucci, S. Abdelwahed, "Model-Based Response Planning Strategies for Autonomic Intrusion Protection", ACM Transactions on Autonomous and Adaptive Systems (TAAS), 2018.
- J2. V. Cardellini, V. Di Valerio, V. Grassi, S. Iannucci, F. Lo Presti, "QoS driven per-request load-aware service selection in service oriented architectures", International Journal of Software and Informatics, Special Issue on Service Oriented Systems Engineering, Vol. 7, No. 2, pp. 195-220, 2013.
- J1. V. Cardellini, E. Casalicchio, V. Grassi, S. Iannucci, F. Lo Presti, R. Mirandola, "MOSES: a framework for QoS driven runtime adaptation of service-oriented systems", IEEE Transactions on Software Engineering, Vol. 38, No. 5, pp. 1138-1159, Sept./Oct. 2012. doi: http://dx.doi.org/10.1109/TSE.2011.68

Books and Monographs

1. BM1. S. Iannucci, "MOSES: a QoS-driven Autonomic Framework for Service Oriented Systems", Universitalia, July 2015, ISBN: 978-88-6507-649-1, EAN: 9788865076491

Book Chapters

- BC2. V. Cardellini, E. Casalicchio, V. Grassi, S. Iannucci, F. Lo Presti, R. Mirandola, "MOSES: a platform for experimenting QoS-driven self-adaptation policies for service oriented systems", To appear on: Software Engineering for Self-Adaptive Systems: Assurances, Springer LNCS. doi: http://dx.doi.org/10.4230/DagRep.3.12.67
- BC1. V. Cardellini, V. Di Valerio, S. Iannucci, F. Lo Presti, "Service-oriented systems for adaptive management of service composition", Adaptive Web Services for Modular and Reusable Software Development: Tactics and Solutions, G. Ortiz and X. Cubo (eds.), IGI Global, pp. 161–195, 2013. doi: http://dx.doi.org/10.4018/978-1-4666-2089-6.ch006

Proceedings of International Conferences and Workshops

- IC11. S. Iannucci, A. Montemaggio, B. Williams. "Towards Self-Defense of Non-Stationary Systems". IEEE International Conference on Computing, Networking and Communications (ICNC 2019)
- IC10. H.A. Kholidy, S. Iannucci, Q. Chen, S. Abdelwahed, J. Hamilton, S. Sengupta. "Attacks Detection in SCADA Systems Using an Improved NON-NESTED GENERALIZED EXEMPLARS Algorithm". *IEEE 12th International Conference on Computer Engineering & Systems (ICCES),* Cairo, Egypt, December 2017
- IC9. S.Iannucci, H. Kholidy, A. Ghimire, R. Jia, S. Abdelwahed, I. Banicescu, "A Comparison of Graph-Based Synthetic Data Generators for Benchmarking Next-Generation Intrusion Detection Systems", *Proceedings of IEEE Cluster 2017,* Honolulu, Hawaii*, September 2017*
- IC8. S. Iannucci, Q. Chen, S. Abdelwahed, "High-Performance Intrusion Response Planning on Many-Core Architectures", *Proceedings of the IEEE Workshop on Network Security Analytics and*

Automation (NSAA 2016) (in conjunction with the IEEE 25th International Conference on Computer Communication and Networks), Waikoloa, Hawaii, August 2016.

- IC7. S. Iannucci, S. Abdelwahed, "A Probabilistic Approach to Autonomic Security Management", *Proceedings of the IEEE 13th International Conference on Autonomic Computing*, Wurzburg, Germany, July 2016.
- IC6. E. Casalicchio, S. Iannucci, L. Silvestri, "Cloud Desktop Workload: a Characterization Study", *Proceedings of the IEEE 3rd International Conference on Cloud Engineering*, Tempe, AZ, March 2015. doi: `http://dx.doi.org/10.1109/IC2E.2015.25`
- IC5. V. Cardellini, S. Iannucci, "Designing a flexible and modular architecture for a private cloud: a case study", *Proceedings of the 6th International Workshop on Virtualization Technologies in Distributed Computing (VTDC 2012)* (in conjunction with the 21st International ACM Symposium on High-Performance Parallel and Distributed Computing), Delft, The Netherlands, pp. 37-44, June 2012. doi: `http://dx.doi.org/10.1145/2287056.2287067`
- IC4. V. Cardellini, V. Di Valerio, V. Grassi, S. Iannucci, F. Lo Presti, "A new approach to QoS driven service selection in service oriented architectures", *Proceedings of the IEEE 6th International Symposium on Service-Oriented System Engineering (IEEE SOSE 2011)*, Irvine, CA, pp. 102-113, Dec. 2011. doi: `http://dx.doi.org/10.1109/SOSE.2011.6139098` (acceptance rate: 33 %) **Best paper award**
- IC3. V. Cardellini, V. Di Valerio, V. Grassi, S. Iannucci, F. Lo Presti, "A performance comparison of QoS-driven service selection approaches", *Proceedings of the 4th European ServiceWave Conference (ServiceWave 2011)*, Poznam, Poland, Lecture Notes in Computer Science Vol. 6994, Springer, pp. 167–178, Oct. 2011.
doi: `http://dx.doi.org/10.1007/978-3-642-24755-2_16`
- IC2. A. Bellucci, V. Cardellini, V. Di Valerio, S. Iannucci, "A scalable and highly available brokering service for SLA-based composite services", *Proceedings of the 8th International Conference on Service Oriented Computing (ICSOC 2010)*, San Francisco, CA, Lecture Notes in Computer Science Vol. 6470, Springer, pp. 527–541, Dec. 2010.
doi: `http://dx.doi.org/10.1007/978-3-642-17358-5_36`
(acceptance rate: 36/234 = 15.4 %)
- IC1. V. Cardellini, S. Iannucci, "Designing a broker for QoS driven runtime adaptation of SOA applications", *Proceedings of the IEEE International Conference on Web Services (ICWS 2010)*, Applications and Industry Track, Miami, FL, pp. 504–511, July 2010.
doi: `http://dx.doi.org/10.1109/ICWS.2010.77` (acceptance rate: 17.5%)

Posters and National Conferences

- P2. S. Iannucci, S. Abdelwahed, "Towards Autonomic Intrusion Response Systems" Proceedings of the IEEE 13th International Conference on Autonomic Computing, poster presentation, Wurzburg, Germany, July 2016.
- NC3. E. Casalicchio, S. Iannucci, L. Silvestri, "Characterization of CPU and disk load for Cloud Desktop Providers" Workshop Informatica Quantitativa 2014 (InfQ 2014), Torino, November 2014.
- P1. V. Cardellini, S. Iannucci, "Improving SOA applications response time with service overload detection", 21st International ACM Symposium on High-Performance Parallel and Distributed Computing (HPDC 2012), poster presentation, Delft, The Netherlands, June 2012.
- NC2. S. Iannucci, V. Cardellini, "Designing a system architecture for a private cloud provider", V Conferenza Italiana sul Software Libero (ConfSL 2011), Milano, June 2011.

- NC1. A. Bellucci, V. Cardellini, V. Di Valerio, S. Iannucci, "A scalable and dependable system for QoS-aware SOA applications", Workshop Informatica Quantitativa 2010 (InfQ 2010), Pisa, July 2010.