

Gabriele Russo Russo

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Personal information

Birthdate: January 17, 1992

Birthplace: Avellino, Italy

Nationality: Italian

Education

2017–today PhD student in Computer Science, Control and Geoinformation at University of Rome Tor Vergata. Winner of a grant financed by the Italian Ministry for Education, University, and Scientific Research.

Advisors: Prof. Valeria Cardellini, and Prof. Francesco Lo Presti.

2014–2017 Laurea Magistrale (MSc equivalent) in Computer Engineering *cum laude* at University of Rome Tor Vergata.

Thesis: “Optimal Deployment and Run-Time Reconfiguration for Data Stream Processing”. *Advisors:* Prof. Valeria Cardellini and Prof. Francesco Lo Presti.

2011–2014 Laurea (BSc equivalent) in Computer Engineering *cum laude* at University of Rome Tor Vergata.

Thesis: “Analysis and Implementation of Energy-Aware Routing Algorithms for Ad-Hoc Wireless Networks”. *Advisor:* Prof. Francesco Lo Presti.

Attended Summer Schools and Symposiums.....

2019 I have been selected for receiving a grant to attend the 7th **Heidelberg Laureate Forum**, which will take place in Heidelberg (Germany) in September.

2018 Symposium “Being human with algorithms”, organized by the German ACM Chapter. Heidelberg, Germany, September 2018.

2018 Summer School: “Advanced Course on Data Science & Machine Learning” (ACDL), Siena, Italy. July 2018.

2017 Summer School: “Optimization, Big Data and Applications” (OBA), Veroli, Italy. July 2017. I also took part in the OBA Award session, presenting my current research activity.

2017 Summer School: “Latency Control for Internet of Services” organized by COST Action 1304 *Autonomous Control for a Reliable Internet of Services* (ACROSS), Karlstad, Sweden, June 2017.

Honors and Awards

Awards.....

2011 Alfieri del Lavoro, awarded by Italian President Giorgio Napolitano and *Federazione Nazionale Cavalieri del Lavoro*.

Included in the list of 25 Italian students completing high school with the highest grades during the previous five years.

Student Grants.....

2019 Travel Grant sponsored by SAP for attending the *13th ACM Conference on Distributed and Event-Based Systems (DEBS 2019)*, Darmstadt, Germany, June 2019.

2018 Travel Grant sponsored by ACM Council of European Chapter Leaders for attending the Symposium "Being human with algorithms", Heidelberg, Germany, September 2018.

2017 Travel Grant for attending the International Summer School on "Latency Control for Internet of Services" organized by COST Action 1304 *Autonomous Control for a Reliable Internet of Services* (ACROSS), Karlstad, Sweden, June 2017.

Teaching activity

Teaching Assistant.....

2018/2019 Computer Architecture course, taught by Prof. Valeria Cardellini and Prof. Francesco Lo Presti at University of Rome Tor Vergata.

2016/2017, 2017/2018 Computer Architecture course, taught by Prof. Salvatore Tucci at University of Rome Tor Vergata.

Theses.....

I have co-supervised the following *Laurea Magistrale* (MSc) theses:

T5: E. Serrao, "Elasticity Control Policies for Data Stream Processing in the Fog: A Reinforcement Learning Approach" (Italian), April 2019. Advisor: Francesco Lo Presti.

T4: A. Ponte, "A Scalable Architecture for Real-Time Data Analytics based on Akka" (Italian), April 2019. Advisor: Valeria Cardellini.

T3: M. Calzetta, "Mechanisms and Reinforcement Learning-based Policies for Elastic Data Stream Processing in Apache Flink" (Italian), February 2019. Advisor: Valeria Cardellini.

T2: F. Di Giacomo, "Operator Migration Policies for Data Stream Processing in a Fog Environment" (Italian), February 2019. Advisor: Francesco Lo Presti.

T1: G. Vertulli, "A Deep Reinforcement Learning-based Approach for Data Stream Processing Application Placement" (Italian), October 2018. Advisor: Valeria Cardellini.

Professional service

I have reviewed manuscripts submitted to the following international journals:

- Future Generation Computing Systems, Elsevier (2019)
- Cluster Computing, Springer (2019)
- Expert Systems with Applications, Elsevier (2018)

I have reviewed manuscripts submitted to the following international conferences:

- ACM Distributed and Event-based Systems (2019)
- IEEE Vehicular Technology Conference (2018)

Publications

International Journals.....

J3: G. Russo Russo, M. Nardelli, V. Cardellini, F. Lo Presti, "Multi-Level Elasticity for Wide-Area Data Streaming Systems: A Reinforcement Learning Approach", *Algorithms*, vol. 11(9), 2018.

J2: V. Cardellini, F. Lo Presti, M. Nardelli, G. Russo Russo, "Decentralized self-adaptation policies for elastic data stream processing", *Future Generation Computer Systems*, vol. 87, pp. 171–185, 2018.

J1: V. Cardellini, F. Lo Presti, M. Nardelli, G. Russo Russo, "Optimal operator deployment and replication for elastic distributed data stream processing", *Concurrency Computat: Pract Exper.*, Vol. 30, No. 9, 2018.

International Conferences and Workshops.....

C5: G. Russo Russo, V. Cardellini, F. Lo Presti, "Reinforcement learning based policies for elastic stream processing on heterogeneous resources", *Proceedings of the 13th ACM International Conference on Distributed and Event-based Systems (DEBS 2019)*, Darmstadt, Germany, 24-28 June 2019.

C4: M. Nardelli, G. Russo Russo, V. Cardellini, F. Lo Presti, "A multi-level elasticity framework for distributed data stream processing", *International Workshop on Autonomic Solutions for Parallel and Distributed Data Stream Processing (Auto-DaSP 2018)* (in conjunction with Euro-Par 2018), Turin, Italy, August 28, 2018. Published in *Euro-Par 2018: Parallel Processing Workshops*, Lecture Notes in Computer Science Vol. 11339, Springer, pp. 53-64, 2019.

C3: G. Russo Russo, "Towards Decentralized Auto-Scaling Policies for Data Stream Processing Applications", *Proceedings of 10th ZEUS Workshop (ZEUS 2018)*, Dresden, Germany, February 2018. CEUR-WS.org/Vol-2072.

C2: V. Cardellini, F. Lo Presti, M. Nardelli, G. Russo Russo, "Auto-scaling in data stream processing applications: A model based reinforcement learning approach", *InfQ 2017 – New Frontiers in Quantitative Methods in Informatics* (in conjunction with VALUETOOLS 2017), Venice, Italy, December 4, 2017. Communications in Computer and Information Science Vol. 825, pp. 97–110, Springer, 2018.

C1: V. Cardellini, F. Lo Presti, M. Nardelli, G. Russo Russo, "Towards hierarchical autonomous control for elastic data stream processing in the fog", *International Workshop on Autonomic Solutions for Parallel and Distributed Data Stream Processing (Auto-DaSP 2017)* (in conjunction with Euro-Par 2017), Santiago de Compostela, Spain, August 29, 2017. *Euro-Par 2017: Parallel Processing Workshops*, Lecture Notes in Computer Science Vol. 10659, Springer, pp. 106–117, 2018. https://doi.org/10.1007/978-3-319-75178-8_9