

Yehia Abd Alrahman

Department of Computer Science
IMT School for Advanced Studies
Piazza San Francesco, 19 55100
Lucca, Italy

Phone: +39 (389) 1470408
Email: yehia.abdalrahman@imtlucca.it
ORCID: orcid.org/0000-0002-4866-6931
Skype: yehia_syr

Date of birth: 1 October 1986

Nationality: Syrian

Gender: Male

Research Interest

My own sphere of special interest in the field of Computer Science is comprised by the challenge of supporting the development of high-quality, correct-by-construction software and systems, featuring predictability, efficiency, re-usability, maintainability and modularity that are essential in contemporary information technology systems (such as embedded systems or service oriented architectures).

Education

- 2013–2017 Ph.D., Computer Science, IMT School for Advanced Studies
Thesis: A Foundational Theory for Attribute-based Communication
Supervisors: Rocco De Nicola and Michele Loreti
- 2010–2013 M.Sc., Computer Science, Philadelphia University
Thesis: A Denotational Semantics for the Language Cloud#
Supervisor: Mourad Maouche
- 2004–2009 B.Sc., Computer Engineering, Philadelphia University
Thesis: Design and Implementation of a Real-Time Obstacles Avoidance Mobile Robot
Supervisor: Mohammad Mahdi

Appointments

- 2018–2019 Postdoctoral Researcher Fellow, IMT School for Advanced Studies
2017–2018 Postdoctoral Researcher Fellow, IMT School for Advanced Studies
1/2016–6/2016 Visiting Research Student, University of Edinburgh, UK
9/2016–12/2016 Research Intern, Max Planck Institute for Software Systems, Germany

Co-Supervision

- 2017-Present Giulio Garbi, Student IMT School for Advanced Studies

Selected Honours and Awards

- 2016 Scholarship from Max Planck Institute for Software Systems for 3-months Internship, Germany, Saarbrücken.
2016 Grant of 50% increase from IMT 638 for 6-months visiting period at the University of Edinburgh, UK.
2016 Erasmus+ Traineeship scholarship for 6-months visiting period at the University of Edinburgh. UK.
2013 Ph.D. in Computer Science Scholarship from IMT Institute for Advanced Studies, Italy, Lucca.
2010 M.Sc. in Computer Science Scholarship from Philadelphia University, Jordan, Amman.
2004 B.Sc. in Computer Engineering Scholarship from Philadelphia University, Jordan, Amman.

Publications

Preprint URLs available at <https://orcid.org/0000-0002-4866-6931>

Journals

- [1] **Alrahman, Y.A et.al.**(2018). A Behavioural Theory for Interactions in Collective-Adaptive Systems. **Submitted** to the Journal of Information and Computation, Elsevier. (arXiv draft available at: [1711.09762](https://arxiv.org/abs/1711.09762))

- [2] **Alrahman, Y.A et.al.**(2017). Programming Interactions in Collective-Adaptive Systems by relying on Attribute-based Communication. **Submitted** to ACM Transactions on Software Engineering and Methodology. (arXiv draft available at: [1711.06092](https://arxiv.org/abs/1711.06092))

Conferences

- [1] **Alrahman, Y.A et.al.**(2016). On the Power of Attribute-Based Communication. In T. Margaria & B. Steffen (Eds.), Formal Techniques for Distributed Objects, Components, and Systems - 36th IFIP WG 6.1 International Conference, FORTE 2016, Heraklion, Crete, Greece, June 6-9, 2016, Proceedings (pp. 1–18). DOI: [10.1007/978-3-319-39570-8_1](https://doi.org/10.1007/978-3-319-39570-8_1)
- [2] **Alrahman, Y.A et.al.**(2016). Programming of CAS Systems by Relying on Attribute-Based Communication. In E. Albert & I. Lanese (Eds.), 7th International Symposium, ISoLA 2016 Imperial, Corfu, Greece, October 10–14, 2016 Proceedings, Part I (pp. 539–553). DOI: [10.1007/978-3-319-47166-2_38](https://doi.org/10.1007/978-3-319-47166-2_38)
- [3] **Alrahman, Y.A et.al.**(2015). A Calculus for Attribute-based Communication. SAC '15 Proceedings of the 30th Annual ACM Symposium on Applied Computing (pp. 1840–1845). DOI: [10.1145/2695664.2695668](https://doi.org/10.1145/2695664.2695668)
- [4] **Alrahman, Y.A et.al.**(2018). A Distributed Communication Infrastructure for Attribute-based Interaction. **Submitted**, Formal Techniques for Distributed Objects, Components, and Systems International Conference, FORTE 2018.

Book chapters

- [1] **Alrahman, Y.A et.al.**(2014). Can We Efficiently Check Concurrent Programs Under Relaxed Memory Models in Maude?. Santiago Escobar (Ed.), 10th International Workshop, WRLA 2014 Held as a Satellite Event of ETAPS Grenoble, France, April, 2014. DOI: [10.1007/978-3-319-12904-4_2](https://doi.org/10.1007/978-3-319-12904-4_2)

Presentations

- [1] **Alrahman, Y.A.**(2015). A Calculus for Attribute-based Communication, CINA meeting, Turin, Italy, February 2015.
- [2] **Alrahman, Y.A.**(2015). A Calculus for Attribute-based Communication, SAC'15, Salamanca, Spain, April 2015.
- [3] **Alrahman, Y.A.**(2015). On Expressiveness and Behavioural Theory of Attribute-based Communication, QUANTICOL meeting, Lucca, Italy, December 2015.
- [4] **Alrahman, Y.A.**(2016). On the Expressiveness of Attribute-based Communication, PEPA CLUB, Edinburgh, UK, January 2016.
- [5] **Alrahman, Y.A.**(2016). On the Power of Attribute-based Communication, FORTE'16, Heraklion, Greece, June 2016.

- [6] **Alrahman, Y.A.**(2017). A Distributed Coordination Infrastructure for Attribute-based Communication, QUANTICOL meeting, Pisa, Italy., February 2017.
- [7] **Alrahman, Y.A.**(2018). A Theoretical Framework for Collective-Adaptive Systems, Camerino, Italy, January 2018.

Professional Activities

- Reviewer, 2017 Special issue for TOMACS ACM Journal.
- Sub-Reviewer, MFCS17, TTCS 2017, TASE 2017, COORDINATION 2016 and 2017, FACS 2014 and 2017, FoCAS@SASO14, and WRLA 2014: additional reviewer.

Software

Open source code from my work on Attribute-based communication can be found on Github:

<https://github.com/lazkany/AbC>

<https://github.com/lazkany/AbCSimulator>

Technical Skills

- Theorem prover: coq
- Maude: An executable rewriting logic framework
- Programming Languages: Java

Spoken Languages

- Arabic (native).
- English (fluent).
- Italian (basic).