# Giuliano Casale

Imperial College London
Department of Computing
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https://orcid.org/0000-0003-4548-7951

## Academic Employment

| | |
|---|---|
| 2020- | *Reader*. Imperial College London, Department of Computing, UK. |
| 2015-20 | *Senior Lecturer*. Imperial College London, Department of Computing, UK. |
| 2013-15 | *Lecturer*. Imperial College London, Department of Computing, UK. |
| 2010-12 | *Imperial College Research Fellow*. Imperial College London, Department of Computing, UK. |
| 2007-08 | *Postdoctoral Research Associate*. College of William & Mary, VA, US. Group: Prof. E. Smirni. |

## Other employment

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|---|---|
| 2009 | *Research Staff Member*. SAP Research, UK. |
| 2006 | *Research Scientist*. Neptuny, Milan, Italy. (Startup, now part of BMC Software and Moviri.) |

## Education

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|---|---|
| 2003-06 | *Ph.D., Computing*, Politecnico di Milano, Italy. Advisor: Prof. G. Serazzi. |
| 1997-02 | *MEng, Computing*, Politecnico di Milano, Italy. Grade: 100/100. 5-year curriculum. |
| 2000-01 | *Erasmus Exchange Student,* University of Manchester, Department of Computing, UK. |

## Awards

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|---|---|
| 2022 | Best Paper Award, IEEE/IFIP DSN (with S. Tuli, N. Jennings). |
| 2022 | Best Paper Award, ICSOC (with R. Wang, A. Filieri). |
| 2022 | Best Paper Award, IEEE INFOCOM (with S. Tuli, N. Jennings). |
| 2017 | Best Paper Award, ACM SIGMETRICS. |
| 2016 | Best Paper Award, ACM/SPEC ICPE (with W. Wang, A. Kattepur, M. Nambiar). |
| 2015 | Best Paper Award, IEEE ICCAC (with D. J. Dubois). |
| 2015 | Best Paper Award, IEEE CLOUD (with J. Wen, L. Lu, E. Smirni). |
| 2012 | Best Paper Award, ACM/SPEC ICPE (with P.G. Harrison). |
| 2008 | Best Paper Award, ACM/IFIP/USENIX MIDDLEWARE (with N. Mi, L. Cherkasova, E. Smirni). |
| 2017 | Best Student Paper Award, IFIP/IEEE IM (with K. Molka). |
| 2008 | Best Student Paper Award, QEST (with Z. Zhang, E. Smirni). |
| 2004 | Best Student Paper Award, IEEE MASCOTS (with G. Serazzi). |
| 2019 | Best Demo Award, ACM/SPEC ICPE. |
| 2018 | Best-in-Session Presentation Award, IEEE INFOCOM. |
| 2003 | IBM Best European Graduates Recognition. |

## Professional Service

### Officer roles and steering committees

| | |
|---|---|
| 2019-23 | SIG Chair: ACM SIGMETRICS. |
| 2015-19 | Board of Directors: ACM SIGMETRICS. |

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| 2021-24 | Steering Committee: QEST conference series. |
| 2017-21 | Steering Committee: QUDOS workshop series. |
| 2014-16 | Steering Committee: ICAC conference series. |

### CONFERENCE CHAIRING

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|---|---|
| 2013 | General Co-Chair: ACM/SPEC ICPE 2013. |
| 2021 | Program Co-Chair: IEEE/IFIP DSN 2021. |
| 2017 | Program Co-Chair: VALUETOOLS 2017. |
| 2015 | Program Co-Chair: IEEE MASCOTS 2015. |
| 2014 | Program Co-Chair: USENIX ICAC 2014. |
| 2012 | Program Co-Chair: QEST 2012. |
| 2012 | Program Co-Chair: ACM SIGMETRICS/Performance 2012. |

### EDITORIAL WORK

| | |
|---|---|
| 2022- | Editor-in-Chief, Elsevier Performance Evaluation (PEVA). |
| 2011-15 | Newsletter Editor, ACM SIGMETRICS Performance Evaluation Review (PER). |
| 2024- | Associate Editor, ACM Trans. on Autonomous and Adaptive Systems (TAAS). |
| 2025- | Senior Associate Editor, ACM Trans. on Modeling and Perf. Eval. of Comp. Sys. (TOMPECS). |
| 2018-2025 | Associate Editor, ACM TOMPECS. |
| 2017-2025 | Associate Editor, IEEE Trans. on Network and Service Management (TNSM). |
| 2022 | Associate Editor, Elsevier PEVA. |
| 2022 | Special Issue Guest Editor, IEEE TNSM. |
| 2021 | Special Issue Guest Editor, IEEE TNSM. |
| 2020 | Special Issue Guest Editor, IEEE TNSM. |
| 2019 | Special Issue Guest Editor, IEEE TNSM. |
| 2018 | Special Issue Guest Editor, Elsevier PEVA. |
| 2017 | Special Issue Guest Editor, IEEE TNSM. |
| 2016 | Special Issue Guest Editor, IEEE TNSM. |
| 2012 | Special Issue Guest Editor, Elsevier PEVA. |
| 2009 | Special Issue Guest Editor, ACM PER. |

### MEMBERSHIP, ROLES, AND COMMITTEE ACTIVITIES IN PROFESSIONAL SOCIETIES

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|---|---|
| 2024 | ACM SIGMETRICS 2024 Doctoral Dissertation Award Committee. |
| 2024 | Membership Committee, IFIP WG 7.3. |
| 2023 | ACM SIGMETRICS 2023 Doctoral Dissertation Award Committee. |
| 2020 | British Computer Society (BCS) Fellow. |
| 2020 | ACM Senior member. |
| 2019 | EiC Search committee, ACM Trans. on Modeling and Perf. Evaluation of Computing Systems. |
| 2017 | Reviewer: BCS Distinguished Dissertation award. |
| 2017 | Reviewer: ACM Future of Computing Academy programme. |
| 2013- | IFIP Working Group 7.3 member, Computer System Modeling. |
| 2012- | Imperial College representative, SPEC Research Group. |
| 2011-12 | Secretary/Treasurer, IEEE Special Technical Community on Sustainable Computing. |

### CONFERENCE ORGANIZATION COMMITTEES

| | |
|---|---|
| 2026 | Workshop co-chair: IEEE/IFIP DSN 2026. |
| 2020 | EU projects track chair: ESOCC. |
| 2016 | Organizer: 2nd QUDOS Workshop (at ISSTA 2016). |
| 2015 | Organizer: 1st QUDOS Workshop (at ESEC/FSE 2015). |

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|---|---|
| 2015 | Replication Packages Co-Chair: ESEC/FSE. |
| 2014 | Publicity Chair: BDC. |
| 2014 | Publicity Chair: QEST. |
| 2011 | Organizer: Joint HPDC/ SIGMETRICS Student Poster Event. |
| 2011 | Organizer: SIGMETRICS Student Industry Workshop. |
| 2011 | Student Activities Chair: SIGMETRICS. |
| 2011 | Track Chair: EURO-PAR. |
| 2010 | Publicity Chair: QEST. |
| 2007 | Publicity Chair: MINENET. |

### OTHER SERVICE

| | |
|---|---|
| 2025 | Book Reviewer: Elsevier. |
| 2022 | Session Chair: QEST. |
| 2021 | Session Chair: TOSME workshop. |
| 2019 | Workshop Host: MAMA. |
| 2017 | Session Chair: SIGMETRICS. |
| 2016 | Session Chair: ICPE. |
| 2015 | Session Chair: VALUETOOLS. |
| 2013 | Session Chair: MASCOTS. |
| 2013 | Book Reviewer: Morgan Kaufmann Publishers. |
| 2011 | Session Chair: SIGMETRICS. |
| 2011 | Track Chair: EURO-PAR. |
| 2010 | Session Chair: HOTMETRICS. |
| 2009 | Session Chair: QEST. |
| 2009 | Session Chair: HOTMETRICS. |
| 2009 | Session Chair: MASCOTS. |
| 2006 | Session Chair: SYS-ML. |

### RESEARCH VISITS

| | |
|---|---|
| 2017 | University of Melbourne, Australia. Host: R. Buyya. |
| 2016 | Carleton University, Ottawa, Canada. Host: M. Woodside. |
| 2015 | Tata Consulting Services Research, Mumbai, India. Host: M. Nambiar. |
| 2015 | Gran Sasso Science Institute, Italy. Host: C. Trubiani. |
| 2014 | College of William & Mary, VA, US. Host: E. Smirni. |
| 2013 | College of William & Mary, VA, US. Host: E. Smirni. |
| 2012 | BCAM, Bilbao, Spain. Host: J. Anselmi. |
| 2004 | UCLA, Computer Science Dept., CA, US. Host: R.R. Muntz. |

### TECHNICAL PROGRAM COMMITTEES

I served 150+ times in TPCs (conferences and workshops):

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|---|---|---|---|
| ACSOS (1) | AI4AS (1) | AIMC (1) | ANNET (2) |
| ANSERVAPP (3) | APSYS (1) | ASMTA (4) | BDC (2) |
| BigData (2) | CAC (1) | CCGRID (3) | CLOUD (6) |
| CLOUDMDE (1) | DCPERF (3) | DSN (7) | DSSO (1) |
| ECMS (1) | EPEW (4) | ESOCC (2) | EURO-PAR (1) |
| GREENMETRICS (4) | HICS (1) | HIM (1) | HOTMETRICS (1) |
| HPDC (1) | IC2E (1) | ICAC (3) | ICCCN (3) |
| ICDCS (11) | ICPE (5) | INFQ (2) | IPDPS (1) |
| ISIICT (2) | IWQoS (4) | JCC (1) | MAMA (10) |
| MAM (2) | MASCOTS (5) | MDHPCL (1) | MICAS (3) |
| MOD (1) | NOMS (3) | OWAD (1) | PABS (1) |
| PERFORMANCE (7) | QEST (11) | ROSSA (1) | SC BoF (1) |
| SDSSC (1) | SeAC (1) | SIGMETRICS (11) | SOCC (1) |

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|---|---|---|---|
| SRDS (1) | Stochastic Models (1) | TOSME (1) | UCC (1) |
| VALUETOOLS (10) | WAIN (1) | WOSP-C (1) | |

### JOURNAL REVIEWS

I served as journal reviewer 90+ times:

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|---|---|---|
| Access (2) | ASOC (1) | Bernoulli J. (1) |
| CAI (1) | COMCOM (10) | Computer J. (3) |
| DKE (1) | ELL (1) | EJOR (7) |
| FGCS (2) | IEEE Computer (1) | IEEE IoT J. (1) |
| INFORMS JoC (1) | J. of Grid Computing (1) | JSS (1) |
| NRL (1) | OPRE (1) | PER (3) |
| PEVA (18) | QUESTA (4) | SIMPAT (3) |
| SOSYM (1) | Stochastic Models (1) | TAAS (1) |
| TACON (1) | TC (2) | TCC (3) |
| TETC (1) | TII (1) | TOMPECS (3) |
| TON (2) | TOP (1) | TPDPS (3) |
| TSC (1) | TSE (4) | TSMC A (1) |
| TNSM (10) | TOSEM (2) | TP (3) |
| TRE (1) | | |

### RESEARCH AND GRANT ASSESSMENT

| | |
|---|---|
| 2025 | Grant Reviewer, EIC Pathfinder Open scheme, 2025 call. |
| 2024 | Grant Reviewer, EPSRC Discipline hopping in ICT, UK. |
| 2024 | Grant Reviewer, EIC Pathfinder Open scheme, 2024 call. |
| 2023 | Grant Reviewer, EPSRC Responsive mode, UK. |
| 2023 | Grant Reviewer, EIC Pathfinder Open scheme, 2023 call. |
| 2022 | Grant Reviewer, EPSRC Open Fellowship scheme, UK. |
| 2021 | Grant Reviewer, Italian PRIN programme. |
| 2021 | Grant Reviewer, EPSRC New Investigator Award scheme, UK. |
| 2020 | Grant Reviewer, ESRC, UK. |
| 2020 | Grant Reviewer, Horizon 2020, FET-OPEN scheme, 2020 call. |
| 2020 | Grant Reviewer, Christian Doppler research association. |
| 2020 | Grant Reviewer, Kuwait Foundation for the Advancement of Sciences. |
| 2019 | Grant Reviewer, Horizon 2020, FET-OPEN scheme, 2019 national call. |
| 2019 | Grant Reviewer, Romanian National Council for Scientific Research, 2019 call. |
| 2019 | Grant Reviewer, British Council Newton Institutional Links grants, 2019 call. |
| 2018- | EPSRC Full Peer Review College Member, UK. |
| 2018 | Grant Reviewer, British Council Newton Institutional Links grants, 2018 call. |
| 2017 | Reviewer: Mock Research Assessment Exercise, Dept. Information Eng., CUHK, Hong Kong. |
| 2017-18 | EPSRC Associate Peer Review College Member, UK. |
| 2017 | Grant Reviewer, EPSRC Responsive Mode, UK. |
| 2017 | Grant Reviewer, NSERC Council, Canada. |
| 2016 | Grant Reviewer, Romanian National Council for Scientific Research. |
| 2016 | Grant Reviewer, Flemish Research Foundation (FWO), Belgium. |
| 2016 | Review Panel Member for Italian PRIN projects. |
| 2015 | Grant Reviewer for Swiss National Science Foundation. |
| 2014 | Grant Reviewer for the Daphne Jackson Trust, UK. |
| 2014 | Grant Reviewer for NSERC Council, Canada. |
| 2012 | Reviewer for Italian Research Assessment Exercise 2004-10 (VQR). |
| 2012 | Review Panel Member for the Romanian National Council for Scientific Research. |
| 2012 | Review Panel Member for the Italian Future in Research 2012 programme. |

### OUTREACH ACTIVITIES

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| 2021 | Online webinar at OASIS TOSCA Implementation Stories series. |
| 2021 | Online webinar at H-CLOUD technical community event. |
| 2020 | Online webinar at Software Practice Advancement group, British Computer Society. |
| 2020 | Online webinar on serverless computing, Eficode webinar series. |
| 2020 | H-CLOUD project communications task force. |
| 2019 | Project presentation at SummerSOC school, Crete, Greece. |
| 2017 | Presentation at DevOpsDays event, Warsaw, Poland (500+ attendees). |
| 2016 | Presentation at OW2 event, CloudExpo, Excel London. |
| 2015 | Presentation at Computing Measurement Group, Mumbai, India (100+ attendees). |
| 2015 | Featured interview on Imperial College homepage about the DICE research project. |
| 2015 | Presentation at OW2 event, CloudExpo, Excel London. |
| 2015 | Presentation, RELATE ITN Doctoral School, Würzburg, Germany. |
| 2014 | Presentation, Future Internet Assembly, Athens. |
| 2014 | Presentation at OW2 event, CloudExpo, Excel London. |
| 2013 | Imperial Fringe Festival, Cloud Computing stand. |
| 2013 | Featured interview on Imperial College website to advertise JRF programme. |
| 2013 | MODAClouds presentation, ICT 2013, Vilnius, Lithuania. |
| 2011-15 | ACM SIGMETRICS LinkedIn group coordinator. |

## SOFTWARE

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|---|---|
| 2022 | Sourceforge's "Community Leader" recognition for Java Modelling Tools (jmt.sf.net). |

## PATENTS

| | |
|---|---|
| 2025 | *Computer implemented method for obtaining an output response to a natural language input prompt.* European Patent, EP24425060, assignee Luxottica and Politecnico di Milano, co-inventors: M. Roveri, S. Tuli, D. Trojaniello, M.F. Palermo, T. Ongarello. |
| 2012 | *Simulation Techniques for Predicting In-Memory Database Systems Performance.* US Patent, US9111022 B2, assignee SAP, co-inventors: S. Kraft, A. Jula. |
| 2011 | *Characterizing Web Workloads For Quality of Service Prediction.* US Patent, US8560618 B2, assignee SAP, co-inventor: S. Pacheco-Sanchez. |
| 2011 | *Predicting performance of a consolidated virtualized computing environment.* US Patent, US 9164785 B2, assignee SAP, co-inventors: S. Kraft, D. Krishnamurthy. |
| 2011 | *Estimating service resource consumption based on response time.* European Patent, EP20100013643, assignee SAP, co-inventors: S. Kraft, S. Pacheco-Sanchez, S. Dawson. |

## INVITED TALKS AND SEMINARS

| | |
|---|---|
| 2025 | UK Network in Stochastics Workshop, University of Liverpool, UK. |
| 2025 | LIDA Data Science Infrastructures Annual Workshop, University of Leeds, UK. |
| 2024 | Keynote, ACM/SPEC International Conference on Performance Engineering (ICPE). |
| 2024 | Keynote, International Conference on Big Data and Artificial Intelligence (BDA). |
| 2023 | Keynote, IEEE International Symposium on Software Reliability Engineering (ISSRE). |
| 2023 | Invited talk, TeaPACS 2023, Int'l Workshop on Teaching Performance Analysis of Comp. Sys. |
| 2022 | Keynote, AUSPDC 2022 symposium, CORE Australasian Computer Science Week. |
| 2022 | Tata Consulting Services, Mumbai, India. |
| 2021 | Invited talk, SODALITE Final workshop, Cloud Expo Europe Frankfurt. |
| 2019 | Virginia Tech, US. |
| 2019 | University of Warwick, UK. |
| 2017 | University of Delft, The Netherlands. |
| 2017 | Umeå University, Sweden. |
| 2017 | Keynote, 1st Vienna Software Seminar on DevOps/Continuous Delivery, Vienna, Austria. |
| 2016 | Invited talk, 2nd Workshop on Performance Analysis of Big data Systems (PABS), Delft, NL. |
| 2016 | University of Pavia, Italy. |

2016 University of Leeds, UK, School of Computing Weekly Colloquium.
2016 Budapest University of Technology and Economics, Hungary.
2015 University of Vienna, Austria.
2015 Gran Sasso Science Institute, Italy.
2015 University of York, UK.
2015 Tata Consulting Services, Mumbai, India.
2015 Keynote, TACTiCS Symp. on Performance Engineering, Mumbai, India.
2014 INRIA Grenoble, France.
2013 University of Edinburgh, UK.
2012 BCAM, Spain.
2011 Politecnico di Milano, Italy.
2011 Keynote, 5th Int. Workshop on Practical Applic. of Stoch. Modelling (PASM), Karlsruhe, DE.
2010 University of Florence, Italy.
2010 University Tor Vergata, Rome, Italy.
2010 BCAM - Basque Center for Applied Mathematics, Bilbao, Spain.
2010 IFIP Working Group 7.3 Workshop, Namur, Belgium.
2010 University of Munich (LMU), Germany.
2010 University of Venice (Cá Foscari), Italy.
2009 Northeastern University, Boston.
2009 INRIA-Grenoble Rhone Alpes, France.
2008 Mathworks, SIMULINK group, Boston, MA.
2008 SAP Research, Belfast, UK.
2007 Dagstuhl - Numerical Methods for Structured Markov Chains.
2007 College of William & Mary, Williamsburg, VA.
2006 IFIP Working Group 7.3 Workshop, St. Malo, France.

## FULL LIST OF PUBLICATIONS

### REFEREED JOURNAL PUBLICATIONS

J69. TAAS R. Wang, G. Yu, G. Casale, P. Chen. A. Filieri. Fine-grained Tracing for Performance Anomaly Diagnosis of Serverless Functions, in *ACM Trans. on on Autonomous and Adaptive Systems*, accepted in Nov 2025.

J68. ITS M. Sheldon, D. Tuncer, G. Casale. TBI: Transient Hierarchical Modeling of Large-Scale Vehicle Sharing Systems, in *IEEE Trans. on Intelligent Transportation Systems*, 26(11):19720-19729, Nov 2025.

J67. IMWUT S. Tuli, G. Casale, M. Roveri. SELA: Smart Edge LLM Agent to Optimize Response Trade-offs of AI Assistants, in *PACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)*, Article 130, 9(3):1-18, Sep 2025.

J66. ITS M. Sheldon, D. Paccagnan, G. Casale. Competitive Analysis of Vehicle-Sharing Systems with Cournot Queueing Games, in *IEEE Trans. on Intelligent Transportation Systems*, 26(8):12039-12048, Aug 2025.

J65. TSC X. Wu, H. Yu, G. Casale, G. Gao. Towards Cost-Optimal Policies for DAGs to Utilize IaaS Clouds with Online Learning, in *ACM Trans. on Services Computing*, 18(4):2439-2455, Jul-Aug 2025.

J64. TOMPECS Y. Gao, G. Casale, R. Singhal. Performance Modeling of Distributed Data Processing in Microservice Applications, in *ACM Trans. on Modeling and Performance Evaluation of Computer Systems*, 9(4):1–30, 2024.

J63. JNSM A. Gias, Y. Gao, M. Sheldon, J. A. Perusquía, O. O'Brien, G. Casale. SampleHST-X: A Point and Collective Anomaly-Aware Trace Sampling Pipeline with Approximate Half Space Trees, in *Journal of Network and Systems Management*, 33(3):44, 2024.

J62. TSE Z. Niu, G. Casale. Neural Density Estimation of Response Times in Layered Software Systems, *IEEE Trans. Softw. Eng.*, 50(3):636-650, Mar 2024.

J61. TOMPECS D. Olliaro, G. Casale, A. Marin, S. Rossi. A product-form network for systems with job stealing policies, *ACM Trans. on Modeling and Performance Evaluation of Computer Systems*, 9(2): 6:1-6:26, 2024.

J60. TOMACS G. Casale, Y. Gao, Z. Niu, L. Zhu. LN: A Flexible Algorithmic Framework for Layered Queueing Network Analysis, *ACM Trans. on Modeling and Comp. Simulation*, 34(3):1–26, Jul 2024.

J59. TMC S. Tuli, G. Casale, N. Jennings. PreGAN+: Semi-Supervised Fault Prediction and Preemptive Migration in Dynamic Mobile Edge Environments, *IEEE Trans. on Mobile Computing*, 23:6881-6895, Jun 2024.

J58. SPE L. Zhu, D. A. Tamburri, G. Casale. RADF: Architecture Decomposition for Function as a Service, *Software: Practice and Experience*, 54(4):566-594, Apr 2024.

J57. TC G. Casale, M. Roveri. Scheduling Inputs in Early Exit Neural Networks, *IEEE Trans. on Computers*, 73(2):451-465, Feb 2024.

J56. TC S. Tuli, G. Casale, N. Jennings. SciNet: Co-Design of Resource Management in Cloud Computing Environments, *IEEE Trans. on Computers*, 72:3590-3602, Dec 2023.

J55. TNSM S. Tuli, G. Casale, N. Jennings. CILP: Co-simulation based Imitation Learner for Dynamic Resource Provisioning in Cloud Computing Environments, *IEEE Trans. on Network and Service Management*, 20(4):4448-4460, Dec 2023.

J54. JNCA S. Tuli, F. Mirhakimi, S. Pallewatta, S. Zawad, G. Casale, B. Javadi, F. Yan, R. Buyya, N. R. Jennings. AI Augmented Edge and Fog Computing: Trends and Challenges, *Elsevier J. of Network and Computer Applications*, 216, article 103648, Jul 2023.

J53. TOMPECS X. Wu, F. De Pellegrini, G. Casale. Delay and Price Differentiation in Cloud Computing: A Service Model, Supporting Architectures, and Performance, *ACM Trans. on Modeling and Performance Evaluation of Computer Systems*, 8(3), Article 6, pp. 1-40, 2023.

J52. TOMACS R. Wang, G. Casale, A. Filieri. Estimating Multiclass Service Demand Distributions Using Markovian Arrival Processes, *ACM Trans. on Modeling and Comp. Simulation*, 33(1-2):11-26, Feb 2023.

J51. TNSM S. Tuli, G. Casale, N. Jennings. DRAGON: Decentralized Fault Tolerance in Edge Federations, *IEEE Trans. on Network and Service Management*, 20(1):276-291, Mar 2023.

J50. SR S. Tuli, G. Casale, N. Jennings. SimTune: Bridging the Simulator Reality Gap for Resource Management in Edge-Cloud Computing, *Nature Scientific Reports*, 12, article 19158, Nov 2022.

J49. TMC S. Tuli, G. Casale, N. Jennings. SplitPlace: AI Augmented Splitting and Placement of Large-Scale Neural Networks in Mobile Edge Environments, *IEEE Trans. on Mobile Computing*, 22:5539-5554, Sep 2023.

J48. TPDS J. Soikkeli, G. Casale, L. Munoz Gonzalez, E. Lupu. Redundancy Planning for Cost Efficient Resilience to Cyber Attacks, *IEEE Trans. on Dependable and Secure Computing*, 20(2):1154–1168, Mar-Apr 2023.

J47. PVLDB S. Tuli, G. Casale, N. Jennings. TranAD: Deep Transformer Networks for Anomaly Detection in Multivariate Time Series Data, *PVLDB*, 15(6):1201-1214.

J46. TPDS S. Tuli, G. Casale, N. Jennings. GOSH: Task Scheduling using Deep Surrogate Models in Fog Computing Environments, *IEEE Trans. on Parallel and Distributed Systems*, 33:2821-2833, Nov 2022.

J45. TSC S. Tuli, S.S. Gill, P. Garraghan, R. Buyya, G. Casale, N. Jennings. START: Straggler Prediction and Mitigation for Cloud Computing Environments using Encoder LSTM Networks, *IEEE Trans. on Services Computing*, 16:615-627, Jan-Feb 2023.

J44. TPDS S. Tuli, G. Casale, N. Jennings. MCDS: AI Augmented Workflow Scheduling in Mobile Edge Cloud Computing Systems, *IEEE Trans. on Parallel and Distributed Systems*, 33(11):2794–2807, Nov 2022.

J43. TPDS S. Tuli, S. Poojara, S. Srirama, G. Casale, N. Jennings. COSCO: Container Orchestration using Co-Simulation and Gradient Based Optimization for Fog Computing Environments, *IEEE Trans. on Parallel and Distributed Systems*, 33(1):101–116, Jan 2022.

J42. PEVA G. Casale, P.G. Harrison, W.H. Ong. Facilitating Load-Dependent Queueing Analysis Through Factorization, in *Perform. Eval.*, Elsevier, vol. 152, Nov 2021.

J41. JSS S. Tuli, S.S. Gill, M. Xu, P. Garraghan, R. Bahsoon, S. Dustdar, R. Sakellariou, O. Rana, R. Buyya, G. Casale, N. Jennings. HUNTER: AI based Holistic Resource Management for Sustainable Cloud Computing, *J. of Systems and Software*, Elsevier, article 111124, Oct 2021.

J40. AAP I. Perez, G. Casale. Variational inequalities and mean-field approximations for partially observed systems of queueing networks, *Advances in Applied Prob.*, 53(3), 687-715, Sep 2021.

J39. TON G. Casale, N. Gast. Performance analysis of list-based caches with non-uniform access, *IEEE/ACM Trans. on Networking*, 29(2):651–664, Apr 2021.

J38. ACCESS A. Alnafessah, A. Ul Gias, R. Wang, L. Zhu, G. Casale, A. Filieri. Quality-Aware DevOps research: where do we stand?, *IEEE Access*, Mar 2021.

J37. ACCESS A. Alnafessah, G. Casale. TRACK-Plus: Optimizing Artificial Neural Networks for Hybrid Anomaly Detection in Data Streaming Systems, *IEEE Access*, Jul 2020.

J36. PEVA L. Zhu, G. Casale, I. Perez. Fluid Approximation of Closed Queueing Networks with Discriminatory Processor Sharing, *Perform. Eval.*, Elsevier, Vol. 139, Jun 2020.

J35. TOMPECS X. Wu, F. De Pellegrini, G. Gao, G. Casale. A Framework for Allocating Server Time to Spot and On-demand Services in Cloud Computing, *ACM Trans. on Modeling and Perform. Eval. Comp. Sys.*, 4(4), 1–31, Dec 2019.

J34. CLUS A. Alnafessah, G. Casale. Artificial Neural Networks Based Techniques for Anomaly Detection in Apache Spark, *Cluster Computing*, Springer, Oct 2019.

J33. SICS G. Casale, M. Artač, W.-J. van den Heuvel, *et al*. RADON: Rational Decomposition and Orchestration for Serverless Computing, *Software-Intensive Cyber-Physical Systems*, Springer, Aug 2019.

J32. JSS S. S. Gill, P. Garraghan, V. Stankovski, G. Casale, *et al*. Holistic Resource Management for Sustainable and Reliable Cloud Computing: An Innovative Solution to Global Challenge, *Journal of Systems and Software*, Elsevier, May 2019.

J31. CSUR R. Buyya, S. N. Srirama, G. Casale, R. Calheiros, Y. Simmhan, B. Varghese, *et al*. A Manifesto for Future Generation Cloud Computing: Research Directions for the Next Decade, *ACM Computing Surveys*, 51(5):105, 2019.

J30. TOE D. Tamburri, G. Casale. Cognitive Distance and Research Output in Computing Education: A Case-Study, *IEEE Trans. on Education*, 1–9, Oct 2018.

J29. TOMPECS W. Wang, G. Casale, A. Kattepur, and M. Nambiar. QMLE: a Methodology for Statistical Inference of Service Demands from Queueing Data, *ACM Trans. on Modeling and Perform. Eval. Comp. Sys.*, 17:1-28, 2018.

J28. POMACS G. Casale. Accelerating Performance Inference over Closed Systems by Asymptotic Methods, *PACM on Meas. Anal. Comput. Syst.* journal, 1(1):1–23, Jun 2017.

J27. TREL J.F. Peréz, G. Casale. LINE : A Scalable Tool for Evaluating Software Applications in Unreliable Environments, *IEEE Trans. on Reliability*, 2017.

J26. TOMPECS K. Molka, G. Casale. Contention-Aware Workload Placement for In-Memory Databases in Cloud Environments, *ACM Trans. on Modeling and Perform. Eval. Comp. Sys.*, 2(1):1–29, Oct 2016.

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W11. MISE G. Casale, *et al.* DICE: Quality-driven development of data-intensive cloud applications, in *Proc. of Modeling in Software Engineering (MISE) Workshop*, May 2015, ACM.

W10. MICAS W. Wang, G. Casale. Evaluating Weighted Round Robin Load Balancing for Cloud Web Services, in *Proc. of Management of Resources and Services in Cloud and Sky Computing (MICAS) Workshop*, Sep 2014, IEEE Press.

W9. MICAS J. Moschetta, G. Casale. OFBench: an Enterprise Application Benchmark for Cloud Resource Management Studies, in *Proc. of Management of Resources and Services in Cloud and Sky Computing (MICAS) Workshop*, Sep 2012, IEEE Press.

W8. MISE D. Ardagna, E. Di Nitto, G. Casale, *et al.* MODAClouds: A model-driven approach for the design and execution of applications on multiple Clouds, in *Proc. of Modeling in Software Engineering (MISE) Workshop*, May 2012, ACM.

W7. DCPERF G. Casale, S. Kraft, D. Krishnamurthy. A Model of Storage I/O Performance Interference in Virtualized Systems, in *Proc. of 1st Data Center Performance Workshop*, Jun 2011.

W6. NMSC G. Casale, P. G. Harrison, M. Vigliotti. Product-Form Approximation of Tandem Queues via Matrix Geometric Methods, in *Proc. of Numerical Solution of Markov Chains (NSMC) Workshop*, Sep 2010.

W5. HOTMETRICS G. Casale, A.Kalbasi, D.Khrishnamurthy, J. Rolia. Automatically Generating Bursty Benchmarks for Multi-Tier Systems, *Special Issue on the 2nd ACM HOTMETRICS workshop*, ACM Perf. Eval. Rev. 37(3):32–37, Dec 2009, ACM.

W4. HOTMETRICS A.Riska, N.Mi, G. Casale, E. Smirni. Feasibility Regions: Exploiting Trade-offs between Power and Performance in Disk Drives, *Special Issue on the 2nd ACM HOTMETRICS workshop*, ACM Perf. Eval. Rev. 37(3):43–48, Dec 2009, ACM.

W3. HOTMETRICS G. Casale, N. Mi, L. Cherkasova, E. Smirni. How to Parameterize Models with Bursty Workloads, *Special Issue on the 1st ACM HOTMETRICS workshop*, ACM Perf. Eval. Rev. 36(2):38-44, Jun 2008.

W2. MAMA G. Casale. CoMoM: Class-Oriented Evaluation of Multiclass Models, *Special Issue on MAMA Workshop*, ACM Perf. Eval. Rev. 36(2):38-44, ACM, Sep 2008, ACM.

W1. MAMA G. Casale, E.Z. Zhang, E. Smirni. Characterization of Moments and Autocorrelation in MAPs, *Special Issue on MAMA Workshop* in ACM Perf. Eval. Rev., 35(2):27–29, Sep 2007, ACM.

### DEMOS

D8. ICPE G. Casale. Automated multi-paradigm analysis of extended and layered queueing models with LINE, in *Proc. of ICPE*, 2019. **Best Demo Award**.

D7. QEST C. Li, T. Altamimi, M. H. Zargari, G. Casale, and D. Petriu. Tulsa: A Tool for Transforming UML to Layered Queueing Networks for Performance Analysis of Data Intensive Applications, in *Proc. of QEST*, 2017.

D6. ICPE G. Casale, M. Cazzoli, J. Shuai, V.S. Lopes, G. Serazzi, L. Zhu. Generalized Synchronizations and Capacity Constraints for Java Modelling Tools, in *Proc. of ACM/SPEC ICPE*, 2017.

D5. MASCOTS D. J. Dubois, G. Casale. Performance Prediction for Burstable Cloud Resources, in *Proc. of VALUETOOLS*, Nov 2016.

D4. QUDOS W. Wang, J. Pérez, G. Casale. Filling the Gap: a Tool to Automate Parameter Estimation for Software Performance Models, in *Proc. of QUDOS*, 2015, ACM.

D3. ICPE S. Spinner, G. Casale, X. Zhu, S. Kounev. LibReDE: A Library for Resource Demand Estimation, in *Proc. of ICPE*, 2014, ACM.

D2. MAM G. Casale, E.Smirni. KPC-Toolbox: Fitting Markovian Arrival Processes and Phase-Type Distributions with MATLAB, ACM Perf. Eval. Rev.,39(4):47, Mar 2012.

D1. SIGMETRICS E.Z.Zhang, G. Casale, E.Smirni. KPC-Toolbox: Best Recipes Toward Automatization of Workload Fitting, ACM Perf. Eval. Rev. 36(2):134-136, Sep 2008.

### TUTORIALS

T8. ICPE S. Tuli, G. Casale. Optimizing the Performance of Fog Computing Environments Using AI and Co-Simulation, at *ACM/SPEC ICPE 2022*.

T7. ICPE A. van Hoorn, A. Gias, L. Zhu, G. Casale, T. Düllmann, M. Wurster. Performance Engineering for Microservices and Serverless Applications: the RADON approach, at *ACM/SPEC ICPE 2020* (invited to be repeated at ICPE 2021).

T6. PERFORMANCE G. Casale, G. Serazzi, L. Zhu. Performance Evaluation with Java Modelling Tools: a Hands-On Introduction, at *IFIP Performance 2017*.

T5. ICPE G. Casale, S. Spinner, W. Wang. Automated Parameterization of Performance Models from Measurements, at *ACM/SPEC ICPE 2016*.

T4. UCC D.Ardagna, N. Ferry, G. Casale. Model-Driven Management of Multi-Cloud Applications, at *IEEE/ACM UCC 2014*.

T3. ASE D.Ardagna, N. Ferry, G. Casale, M.Almeida, J.F.Pérez. MDD-CLOUD - Model Driven Design of Cloud Applications with "a priori" Quality of Service Guarantees, at *IEEE/ACM ASE 2014*.

T2. SIGMETRICS G. Casale. Building Accurate Workload Models using Markovian Arrival Processes, at *ACM SIGMETRICS 2011*, Jun 2011.

T1. ICPE G. Casale, G. Serazzi. Quantitative System Evaluation with Java Modelling Tools, at *ACM/SPEC ICPE 2011*, Mar 2011.

## TEACHING

### CURRENT TEACHING

2021– Probability and Statistics, Imperial College London.

2021– Scheduling and Resource Allocation, Imperial College London.

### PAST TEACHING

2015–23 Simulation and Modelling, Imperial College London.

2014–20 Operations Research, Imperial College London.

2018–20 Performance Engineering, Imperial College London.

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|---|---|
| 2016–17 | Performance Engineering (Half module), Imperial College London. |
| 2014–15 | Performance Analysis (Half module), Imperial College London. |
| 2011–14 | Performance Analysis, Imperial College London. |
| 2005–06 | Capacity planning (Dimensionamento dei Sistemi Informatici), Politecnico di Milano. |
| 2003 | Enterprise Systems (Impianti Informatici), Politecnico di Milano, Italy. |

### Project supervision

A UG final project is equivalent to a BSc thesis. A MSc final project is equivalent to a MSc thesis. Group projects are 3-month projects with a development focus. ISO and Topics projects are literature surveys. MRes projects are 4-month research projects that award the same number of credits of a course.

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|---|---|
| 2010–20 | 23 UG final projects, 1 MRes project, 37 MSc final projects, 11 UG group projects, 3 MSc group project, 3 ISO projects, 1 Topics project. |
| 2003–06 | 15 final projects for UG and MSc students at Politecnico di Milano, Italy. |

## Supervision and mentoring

### Research Supervision

*Postdoctoral researchers* (7): Eleftherios Anastasiadis (2021), Jose Antonio Perusquia Cortes (2021), Chen Li (2016-2018), Pooyan Jamshidi (2015-16), Rasha Osman (2015), Daniel J. Dubois (2014-16), Juan F. Pérez (2013-15).

*Pre-doc researchers* (11): Adam Eljaafari (2023), James Stadler (2023), Harshit Mawandia (2022), Yicheng Gao (2021), Matthew Sheldon (2021), Sajal Mittal (2021), John Yao (2019; UROP), Lulai Zhu (2019-21), Vitor S. Lopez (2016), Shuai Jiang (2015), Tatiana Ustinova (2015-17).

*PhD students* (18): Chenyu Huang (2025-), Zhuoyuan Li (2024-), Wenxiang Luo (2023-), Yaqi Zhu (2023-), Yichong Chen (2022-), Julianna Bor (2022-2025; co-supervision), Matthew Sheldon (2021-), Yicheng Gao (2020-25), Zifeng Niu (2020-24), William Plumb (2020-26), Shreshth Tuli (2020-23; co-supervision; **SPEC dissertation award winner**), Runan Wang (2019-; co-supervision), Ahmad Alnafessah (2017-22), Alim Gias (2017-22), Lulai Zhu (2017-22), Salvatore Dipietro (2015-19), Karsten Molka (2013-17), Weikun Wang (2013-16).

*Industrial PhD mentorships* (2): Stephan Kraft (2009-11), Sergio Pacheco-Sanchez (2009-11).

## University Service

### PhD Vivas and Juries

*Internal examiner* (9): Imperial College London (2024, 2023, 2022, 2020, 2018, 2×2017, 2014, 2013, 2012).

*External examiner* (17): University of Melbourne (Australia, 2025), Ecole Polytechnique (France, 2023), University of Galway (Ireland, 2023), University of Antwerp (Belgium, 2023), University of Lund (Sweden, 2022), University of Manchester (UK, 2022), University of Rome Tor Vergata (Italy, 2021), University of Florence (Italy, 2020), University of Melbourne (Australia, 2020), University of Calgary (Canada, 2017), Umeå University (Sweden, 2017), Delft University (The Netherlands, 2017), Carleton University (Canada, 2016), Newcastle University (UK, 2015), University of Turin (Italy, 2013), Politecnico di Milano (Italy, 2012), DTU Copenhagen (Denmark, 2010).

*Interim evaluations* (3): University of Pisa (2022), University of Florence (2021), Umeå University (2016).

### Administration

All the activities below have been carried out at Imperial College London.

Ongoing roles and activities:

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| 2018- | PhD admissions tutor, Department of Computing. |
| 2020-23 | Academic staff representative (non-professorial), Department of Computing. |
| 2023- | Board member, Science and Solutions for a Changing Planet DTP, Grantham Institute. |
| 2018- | Panel Member for Computing, Faculty of Engineering President's PhD scholarships panel. |

Past roles and activities:

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| 2023 | JP Morgan PhD fellowships shortlisting panel, Faculty of Engineering. |
| 2023 | Computing workload working group, Department of Computing. |
| 2022 | Work location framework committee, Department of Computing. |
| 2017-18 | PhD admissions tutor, HiPEDS Centre for Doctoral Training. |
| 2016-18 | PhD scholarship committee, HiPEDS Centre for Doctoral Training. |
| 2015- | PhD scholarship committee, Department of Computing. |
| 2017 | Panel co-chair, Google European PhD fellowships departmental shortlisting panel. |
| 2016-18 | Deputy PhD admissions tutor, Department of Computing. |
| 2015 | Departmental EPSRC doctoral prize committee. |
| 2013-16 | Internal lunch seminars coordinator. |
| 2012 | Panel member, PhD Careers Event. |
| 2012 | Judge for Google PhD Poster Competition. |

Admin work recognition:

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|---|---|
| 2025 | Department of Computing Silver award for "Outstanding improvements to PhD admissions including building a new platform." |