Giuseppe Congiu

Contact Information

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Education

July 2018	Ph.D. in Computer Science **Johannes Gutenberg University of Mainz** Magna cum Laude Dissertation: "Improving I/O Performance in HPC Through Guided Prefetching and Non-Volatile Memory Devices" Advisors: Prof. Dr. André Brinkmann (JGU), Dr. Sai Narasimhamurthy (Seagate)
December 2008	M.S. in Electrical & Electronic Engineering, **University of Cagliari** Thesis: "Cell BE: Performance Analysis of the Element Interconnect Bus and Development of an Alternative Packed Switched Solution" Advisor: Prof. Luigi Raffo
September 2005	B.S. in Electrical & Electronic Engineering **University of Cagliari**

Appointments

2021 - present	Research Scientist at Innovative Computing Laboratory, University of Tennessee Knoxville TN, USA *Performance Analysis and Modelling*
2017 - 2020	Postdoctoral Fellow at Argonne National Laboratory IL, USA *Programming Models and Runtime Systems*
2013 - 2017	Research Engineer at Seagate System UK Ltd, Havant *High Performance Parallel I/O*
2011 - 2013	Early Stage Researcher at Xyratex Ltd, Havant *Distributed I/O Caching*
2009 - 2010	Software Developer at Sardegna Ricerche & IBM Italy, Pula *Parallel Programming*

Scholarships and certificates

February 2016	Marie Curie Initial Training Network Certificate European Commission funded Ph.D. programme

Professional Activities

Projects

2021 - present	PAPI: https://www.icl.utk.edu/papi
2017 - 2020	MPICH: https://www.mpich.org
2016 - 2017	SAGE: http://www.sagestorage.eu
2016 - 2017	EsiWace: https://www.esiwace.eu
2013 - 2017	DEEP-ER: https://www.deep-projects.eu
2011 - 2013	SCALUS (SCALing by mean of Ubiquitous Storage)
2009 - 2010	MIACell (Medical Image Analysis on Cell broadband engine)

Technical Reviewer for International Journals

2021 Elsevier Journal of Parallel and Distributed Computing (JPDC)
2019 Concurrency and Computation: Practices and Experience (CPE)
2018 Elsevier Journal of Parallel Computing (PARCO)
2017 Elsevier Journal of Parallel and Distributed Computing (JPDC)
2017 IEEE Transaction on Parallel and Distributed Systems (TPDS)

Technical Reviewer for International Conferences and Workshops

2022 IEEE Hot Interconnects Symposium (HOTI)
2020 IEEE/ACM International Symposium on Cluster, Cloud and Internet Computing (CCGRID)
2020 IEEE International Workshop on Accelerators and Hybrid Exascale Systems (AsHES)
2019 IEEE International Workshop on Accelerator Programming Using Directives (WACCPD)
2019 IEEE Conference on Data Science and Systems (DSS)
2016 IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGRID)
2015 IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGRID)

Program Committee Member

2022 Program Committee Member of the IEEE Hot Interconnects Symposium (HOTI)
2020 Program Committee Member of the IEEE/ACM International Symposium on Cluster, Cloud and Internet Computing (CCGRID)
2020 Program Committee Member of the IEEE International Workshop on Accelerators and Hybrid Exascale Systems (AsHES)
2019 Program Committee Member of the IEEE International Workshop on Accelerator Programming Using Directives (WACCPD)
2019 Program Committee Member of the IEEE Conference on Data Science and Systems (DSS)

Invited Talks

2019 The 9th IEEE International Workshop on Accelerators and Hybrid Exascale Systems: Evaluating the Impact of High Bandwidth Memory on MPI Communciation

Tutorials and Talks

2022 VI-HPS Tuning Workshop: PAPI (Performance API) Introduction & Overview
2019 Yearly Argonne MPI Tutorial: Hybrid Programming Models, MPI+Accelerators (GPUs)
2019 National Center for Supercomputing Applications (NCSA), Petascale Institute: MPI Collectives, MPI Shared Memory and MPI+Accelerators

Publications

2018 G. Congiu, P. Balaji, "Evaluating the Impact of High-Bandwidth Memory on MPI Communications" 2018 IEEE International Conference on Computing and Communications (ICCC), Chengdu China, 2018

2017 G. Congiu, M. Grawinkel, F. Padua, J. Morse, T. Süß and A. Brinkmann, "MERCURY: A Transparent Guided I/O Framework for High Performance I/O Stacks" *2017 IEEE Euromicro International Conference on Parallel, Distributed and Network-based Processing (PDP)*, St. Petersburg, 2017. doi: 10.1109/PDP.2017.83

2016 G. Congiu, S. Narasimhamurthy, T. Süß and A. Brinkmann, "Improving Collective I/O Performance Using Non-volatile Memory Devices," *2016 IEEE International Conference on Cluster Computing (CLUSTER)*, Taipei, 2016, pp. 120-129. doi: 10.1109/CLUSTER.2016.37

2014 G. Congiu, M. Grawinkel, F. Padua, J. Morse, T. Süß and A. Brinkmann, "POSTER: Optimizing scientific file I/O patterns using advice based knowledge," *2014 IEEE International Conference on Cluster Computing (CLUSTER)*, Madrid, 2014, pp. 282-283. doi: 10.1109/CLUSTER.2014.6968763

2012 G. Congiu, M. Grawinkel, S. Narasimhamurthy and A. Brinkmann, "One Phase Commit: A Low Overhead Atomic Commitment Protocol for Scalable Metadata Services," *2012 IEEE International Conference on Cluster Computing Workshops*, Beijing, 2012, pp. 16-24. doi: 10.1109/ClusterW.2012.16