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 Programmer*

Scholarships and certificates

February 2016	Marie Curie Initial Training Network Certificate Ph.D. program directly funded by the European Commission.

Professional Activities

Projects

2021	PAPI: https://www.icl.utk.edu/papi
2017	MPICH: https://www.mpich.org
2016	SAGE Project: http://www.sagestorage.eu
2013	DEEP-ER (Dynamic Exascale Entry Platform - Extended Reach) Project: https://www.deep-projects.eu
2011	SCALUS (SCALing by mean of Ubiquitous Storage) Project
2009	MIACell (Medical Image Analysis on Cell broadband engine) Project

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 Interconnect 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)
2015-2016	IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGRID)

Program Committee Member

2022	Program Committee Member of the IEEE Hot Interconnect 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