Mohsen Seyedkazemi Ardebili

I am a postdoctoral researcher at the University of Bologna with a Ph.D. in Electronics, Telecommunications, and Information Technologies Engineering. My research focused on high-performance computing systems design, analysis, and management. I have six years of industry experience and skills in MLOps, machine learning, deep learning, Python, PyTorch, PySpark, Dask, TensorFlow, predictive modeling, big data, parallel programming, and statistical data analysis. I am passionate about using my expertise to drive innovation and advance knowledge in my field.

CONTACT

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SKILLS

MLOps (Kubeflow)
High-performance computing (HPC) systems
Kubernetes
Deep Learning
Machine Learning
Anomaly Detection/Prediction
Predictive Models
Parallel Computing
Python (Programming Language)
PyTorch - TensorFlow
PySpark - Dask
Statistical Data Analysis
Big Data
NoSQL Databases (Apache Cassandra, KairosDB)
MATLAB

WORK EXPERIENCE

University of Bologna	*Bologna, Italy*
Postdoctoral Researcher	*Aug 2022 - Present*
University of Bologna	*Bologna, Italy*
Research Fellow (Ph.D.)	*Nov 2018 - Jul 2022*
Sabalan Combined Cycle Power Plant (1000~1440 MW)	*Ardabil, Iran*
Systems and Network Administrator	*April 2009 - Aug 2015*
ASACO	*Ardabil, Iran*
IT & Network Engineer	*June 2007 - May 2009*
Mana Rayan Dorsa	*Ardabil, Iran*
Founder	*2012 - 2015*

EDUCATION

University of Bologna — *Bologna, Italy*
Ph.D. in Electronics, Telecommunication, and Information Technology — *2018 - 2022*
Research Topic: *Design, Analysis, and Management of High-Performance Computing Systems*
Supervisor Prof. Luca Benini

University of Bologna — *Bologna, Italy*
M.Sc. in Telecommunications Engineering (Grade: 104/110) — *2015-2018*
Research Topic: *Software-Defined Networking (SDN) Applied to Survivable C-Ran: an Intent-Based Implementation*

Islamic Azad University of Ardabil — *Ardebil, Iran*
B.Sc. Electrical Engineering (Grade: 15.40/20) — *2002-2006*

PUBLICATIONS

Borghesi, Andrea, Carmine Di Santi, Martin Molan, Mohsen Seyedkazemi Ardebili, Alessio Mauri, Massimiliano Guarrasi, Daniela Galetti et al. ***"M100 ExaData: a data collection campaign on the CINECA's Marconi100 Tier-0 supercomputer."*** Nature Scientific Data 10, no. 1 (2023): 288.

Martin Molan, Mohsen Seyedkazemi Ardebili, Junaid Ahmed Khan, Daniele Cesarini, Francesco Beneventi, Andrea Borghesi, Andrea Bartolini ***"GRAAFE: GRaph Anomaly Anticipation Framework for Exascale HPC systems"*** Journal in preparation

Francesco Antici, Mohsen Seyedkazemi Ardebili, Andrea Bartolini, Zeynep Kiziltan, ***"High-performance computing, M100, job power consumption, workload analysis, dataset, machine learning"*** Conference in preparation

Mohsen Seyedkazemi Ardebili, Andrea Bartolini, Andrea Acquaviva, and Luca Benini, "***HazardNet: a Thermal Hazard Prediction Framework for Datacenters***", Journal in preparation to submit to Elsevier journal "Engineering Applications of Artificial Intelligence"

Mohsen Seyedkazemi Ardebili, Andrea Bartolini, Andrea Acquaviva, and Luca Benini, "***A Semi-supervised Deep Learning Approach for Thermal Anomaly Detection and Location in HPC Systems***" Journal in preparation

Mohsen Seyedkazemi Ardebili, Andrea Bartolini, Luca Benini, "***Multi-level anomaly prediction in Tier-0 datacenter: a deep learning approach***", 2022 Proceedings of the 19th ACM International Conference on Computing Frontiers

Mohsen Seyedkazemi Ardebili, Andrea Bartolini, Andrea Acquaviva, and Luca Benini, "***Rule-based Thermal Anomaly Detection for Tier-0 HPC Systems***", 3rd ISC HPC International Workshop on "Monitoring and Operational Data Analytics", June 2, 2022

Mohsen Seyedkazemi Ardebili, Davide Brunelli, Tommaso Polonelli, Luca Benini, and Andrea Bartolini. "***A Full-Stack IoT Framework for Room Temperature Modelling on Large-Scale HPC Machines***" Submitted to Elsevier journal "Array"

Mohsen Seyedkazemi Ardebili, Marcello Zanghieri, Alessio Burrello, Francesco Beneventi, Andrea Acquaviva, Luca Benini, Andrea Bartolini. "***Prediction of Thermal Hazards in a Real Datacenter Room Using Temporal Convolutional Networks***". 2021 Design, Automation and Test in Europe Conference and Exhibition (DATE2021), IEEE. pp. 1256–1259.

Mohsen Seyedkazemi Ardebili, Carlo Cavazzoni, Luca Benini, and Andrea Bartolini. "***Thermal Characterization of a Tier0 Datacenter Room In Normal and Thermal Emergency Conditions***" High Performance Computing in Science and Engineering 2019, Ostrava, Czech Republic

Baghbanpourasl, A and Najarbashi, G and Seyedkazemi Ardebili, M."***Floating Entanglement Witness Measure and Genetic Algorithm***", International Iran Conference on Quantum Information.Sharif University of Technology, Tehran, Iran Sep. 2012

Mohsen Seyedkazemi Ardebili, "***Designing Optimal PID controller with Genetic Algorithm In view of controller Location in the plant***" 7th International Conference on Signal Processing, Robotics and Automation, Cambridge, UK, 2008, ISBN ~ ISSN: 1790-5117, 978-960-6766-44-2

Mohsen Seyedkazemi Ardebili, Farzad Sedaghati. "***Genetic Algorithm application to control of STATCOM for damping of sub Synchronous resonance***" 7th WSEAS International Conference on POWER SYSTEMS (PE '07) Beijing, China, Sep 2007

Mohsen Seyedkazaemi Ardebili, Adel Akbarimajd, Ali Rahnamaei, Amirreza Baghbanpourasl. "***A Genetically Tuned Optimal PID controller***" WSEAS Transaction on System And Control Issue 3, Volume 2, March 2007 ISSN: 1991-8763

COURSES & CERTIFICATIONS

Introduction to Quantum Computing School Summer School - CINECA	*June 2023*
Practical Deep Learning PRACE (Partnership for Advanced Computing in Europe)	*Nov. 2022*
Machine Learning with AMD GPUs and ROCm Software HLRS - HighPerformance Computing Center Stuttgart	*Jan. 2021*
Advanced School on Parallel Computing - CINECA 30DEAE60 HPC Courses - CINECA	*March 2021*
Parallel programming with MPI/OpenMP Summer School - ETH Zürich	*Aug. 2020*
Machine Learning Embedded Brains@Infineon Summer School : Infineon Austria	*Aug. 2020*
Containerization in HPC HPC Courses : CINECA	*Nov. 2020*
HPC Architectures for AI and Dedicated Applications ACM Europe Summer School 2019 in Barcelona - Universitat Politècnica de Catalunya (UPC)	*July 2019*
Neural Networks and Deep Learning N33LCRSKPRTY Online Course - Coursera	*March 2019*
Energy Efficiency in HPC HPC Courses - CINECA	*Feb. 2019*
Java Build Automation with MAVEN Online Course	*May 2018*
CEH Certified Ethical Hacker Amirkabir University of Technology	*Oct. 2013*
SCADA: Control System Engineer PSI Product/System Iran Control and Communication System Supply Co.	*Feb. 2013*
CCNA: Cisco Certified Network Associate Carrier Digit N5O7E9W2	*April 2012*
Workshop Stuxnet Sharif University of Technology	*Nov. 2011*
Gas Turbine V94.2 General Training & Operations General Training & Operations & Maintenance of MECO Company (TXP Control System, EBOP(MV / LV), Electric GEN/TRF Protection, Synchronizing, Measuring Metering System, SEE / SFC System, Gas Turbine Protection, GT Governor Control, EBOP (DC & UPS) MAPNA GROUPS– MAPNA Electrical and Control Engineering and Manufacturing Co. (MECO)	*2010*

Windows Servers	*2009-2010*
Windows Server 2003 & 2008 Active Directory, Configuring 70-640	
Windows Server 2008 Application Infrastructure, Configuring 70-643	
Microsoft windows 7 & XP Pro, Configuration 70-680	
MAX Information and Technology Institute	
PLC S7 300 SIEMENS	*Oct. 2009*
SIEMENS A&D Systems Training : QESHM VOLTAGE	