

CURRICULUM VITAE

Academic Employment

Uppsala University, Sweden, 2020

- Information Technology Department
 - Title: Docent (Associate Professor) in Scientific Computing

Uppsala University, Sweden, 2018-present

- Information Technology Department
 - Position: Assistant Professor (Biträdande universitetslektor)
 - Employment: 100%
- Assignments
 - Scientific Computing Division
 - Task: Research and Teaching
 - Information Technology Department
 - Coordinator Computational Science master's programme
 - Division's representative and infrastructure contact person
 - UPPMAX (HPC Center) board member
 - SustAinimal Project at Swedish University of Agricultural Sciences (SLU)
 - Duration: 2020 – 2022
 - Position: Senior Researcher
 - Commitment: 20%
- Co-founder of the Integrative Scalable Computing Lab (ISCL, <http://iscl.research.it.uu.se/>)

Additional Employment

Scaleout Systems AB. (<http://www.scaleoutsystems.com>), 2016-present

- Co-founder and Lead Scientist Distributed Computing Infrastructures (DCI)
- 20% employment in accordance with the Swedish rules for "Bisyssla"

Previous Employments

Uppsala University, Sweden, 2015-2018

- Information Technology Department
 - Position: Researcher (Forskare), permanent position
 - Status: On leave
- Assignments
 - Division of Scientific Computing
 - Task: Research and Teaching
 - Employment: 50%
 - Swedish National Infrastructure for Computing
 - Task: Senior Cloud Architect
 - Employment: 50%

Helsinki Institute of Physics, University of Helsinki, Finland, 2015

- Position: Visiting Researcher

Helsinki Institute of Physics, University of Helsinki, Finland, 2012-2014

- Position: Postdoctoral Researcher
- Project: Datacenter Indirection Infrastructure for Secure HEP Data Analysis with Professors Eerola and Tarkoma

National Center for Physics, Islamabad, Pakistan, 2003-2004

- Position: Scientific officer

Education

Uppsala University, Uppsala, Sweden, 2007-2012

- Ph.D in Scientific Computing, June 2012
 - Supervisor: Professor Sverker Holmgren
 - Thesis: Managing Applications and Data in Distributed Computing Infrastructures
 - Project funded by Innovative Tools and Services for NorduGrid and the e-Science Collaboration
- Licentiate in Scientific Computing, March 2010
 - Supervisor: Professor Sverker Holmgren

Uppsala University, Uppsala, Sweden, 2005-2007

- Master's degree in Scientific Computing, January 2007
- Participated in CERN's OpenLab summer student program, 2006

Shaheed Zulfikar Ali Bhutto Institute of Science and Technology, Pakistan, 2001-2003

- Master's degree in Computer Science, June 2003

Quaid-i-Azam University, Pakistan, 1999 -2000

- Post-graduate diploma in Computer Science

Pedagogical Trainings

- **Supervising PhD Students Course**, Uppsala University
 - Autumn 2016
 - Three weeks of full-time staff training
- **Academic Teacher Training Course**, Uppsala University
 - Autumn 2016
 - Five weeks of full-time staff training

Student(s) Supervision

- **Principal Supervisor for Mr. Tianru Zhang's doctoral thesis, 2020 – 2024**
 - Title: Management of large data streams using smart filters and rule-based strategies
 - Registered at Division of Scientific Computing, Department of Information Technology, Uppsala University, Sweden
- **Mentor for Mr. Omar Javed's doctoral thesis, 2017 – 2022**
 - Title: Towards dynamic non-functional program analysis in a virtualized environment
 - Registered at Department of Informatics, Università Della Svizzera Italiana, Switzerland
 - Note: One-year (2021) DocMobility fellowship grant from the Swiss National Foundation (SNF). Currently, Omar is working full-time under my supervision.
<http://p3.snf.ch/project-191490>
- **Associate Supervisor for Dr. Marco Capuccini's doctoral thesis, 2016-2019**
 - Title: Large-scale data integration and machine learning using cloud infrastructures
 - Registered at Division of Scientific Computing, Department of Information Technology, Uppsala University, Sweden
- **Supervised and Reviewed more than thirty-five M.Sc. theses**

Teaching Experience

Master's Courses

Uppsala University, Uppsala, Sweden

- High Performance Computing Course, 7.5hp, Computational Science Master's Program
 - Role: Teacher Assistant (2007-2008), Instructor (2009-2011)
- Applied Cloud Computing Course, 10hp, Computational Science Master's Program
 - Role: Teacher (2015-present)
- Large Datasets for Scientific Applications Course, 5hp, Computational Science Master's Program
 - Role: Teacher (2015-present)
- Data Engineering-I Course, 5hp & 7.5hp, Data Science Master's Program
 - Role: Teacher (2021-)
- Data Engineering-II Course, 5hp & 7.5hp, Data Science Master's Program
 - Role: Teacher (2021-)

PhD Courses

Uppsala University, Uppsala, Sweden

- Applied Cloud Computing Course (ACC), 5hp, PhD Course
 - Role: Teacher (2018)
 - Funded by Swedish e-Science Education (SeSE)
- GPU programming for Machine Learning and Data Processing, 5hp, PhD Course
 - Role: Teacher (2020 & 2022)
 - Funded by Swedish e-Science Education (SeSE)

Swedish University of Agricultural Sciences, Uppsala Sweden

- Big Data and Machine Learning (BDML), 5hp, PhD Course
 - Role: Teacher (2016 & 2018)
 - Funded by Veterinary Medicine and Animal Sciences, GS-VMAS

External Review Assignments

PhD Theses

- Title: Performance-aware Cloud Resource Management for Microservices-based Applications
 - Candidate: Mr. Muhammad Abdullah
 - University: Punjab University College of Information Technology, University of The Punjab, Pakistan.

Master Theses

- Title: A Comparative Analysis of Dynamic Averaging Techniques in Federated Learning
 - Candidate: Mr. Sashlin Reddy
 - University: School of Computer Science and Applied Mathematics, University of the Witwatersrand, South Africa

Other Activities

- **Appointed Visiting Professor by the Higher Education Commission (HEC) of Pakistan (2019)**
 - Visiting Foreign Faculty Program (VFFP) is an initiative by the HEC to invite skilled expatriates to contribute in the indigenous academic setup

- **Technical Reviewer for Journals**
 - Journal, IEEE Transactions on Mobile Computing, Impact factor 4.475
 - Journal, Future Generation Computer Systems, Impact factor 6.125
- **Volunteer Participation in the Pakistan High School Summer Science Research program 2013-present)**
 - Provide basic-level research exposure to underprivileged students in remote rural areas of Pakistan
 - Project funded by the Pakistan Science Foundation
- **Member of the BenchCouncil: International Open Benchmark Council**
 - Technical Program Committee member for Bench20 conference.
<https://www.benchcouncil.org/bench20/pc.html>

Relevant Technical Skills

- Applied machine learning
- Blockchain technologies
- OpenStack cloud suite
- Deployments with Kubernetes
- Ansible based contextualization and orchestration
- GlusterFS, a distributed file system capable of managing data at petascale
- Ceph software-defined storage solution for object, block and filesystem storage
- Hadoop cluster management, experienced with version 1*
- RHadoop, solution for integrating R with Hadoop
- Advanced Resource Connector (ARC) middleware for distributed computing
- Condor software for high throughput computing
- Host Identity Protocol (HIP), a secure communication network protocol
- GridFTP, a protocol provides secure end-to-end communication channel
- Essential knowledge of NoSQL based tools
- Sufficient experience with relational databases

Organized Workshops

- SNIC Science Cloud (<https://cloud.snic.se/>) Training Workshops
 - Workshop material: <https://github.com/SNICScienceCloud/technical-training.git>
 - Venues
 - Information Technology Department, Uppsala University (May 2015)
 - SciLifeLab, Uppsala University (March 2016)
 - SciLifeLab, Stockholm (May 2016)
 - PDC, Stockholm (August 2016)
 - C3SE, Gothenburg (September 2016).