

## CURRICULUM VITAE

# Valon Raca

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### EDUCATION

2013 – 2019

**University of Vienna | Vienna, Austria**

**PhD (Dr. Techn.): Scientific Computing**

Supervisor: ao. Univ.-Prof. Eduard Mehofer

Thesis Title: Efficient Execution of High Performance Computing Applications on Asymmetric Heterogeneous Hardware Architectures

2007 – 2011

**University of Prishtina | Prishtina, Kosovo**

Joint EU TEMPUS Programme in Computer Science with Université de La Rochelle, France and Institute of Technology Carlow, Republic of Ireland

**MSc: Computer Science**

2002 – 2007

**University of Prishtina | Prishtina, Kosovo**

**BSc: Computer Engineering**

### PROFESSIONAL EXPERIENCE

#### **Academic**

10/2008 – ongoing (sabbatical 03/2018 – 06/2019)

**Lecturer | University of Prishtina, Prishtina, Kosovo**

- Lecturer in Parallel Programming for Master's Study Program Computer Engineering, Faculty of Electrical and Computer Engineering (2016 - ongoing), Computer Architecture, Internet Programming (2019 – ongoing); Teaching Assistant in Software Engineering and Operating Systems (2008 – ongoing).

09/2014 – ongoing (only Winter Semesters)

**Lecturer (Group B/B2) | University of Vienna, Vienna, Austria**

- Lecturer for Master's Study Program Scientific Computing, Faculty of Computer Science; Course: Parallel Architectures and Programming Models (Winter Semester)
- Topics: Parallel programming with GPGPU; Parallel programming and optimizations with OpenCL.

03/2018 – 06/2019

**University Assistant (Group B/B1) | University of Vienna, Vienna, Austria**

- Research and teaching focused on High Performance Computing / Scientific Computing / Parallel Computing
- Teaching topics: Heterogeneous Computing with OpenCL, Optimizing Data-Parallel Codes written in OpenCL, Deep Learning with Accelerators – TensorFlow.

## **Industry**

12/2011 – 02/2017

**Consultant (freelance, project-based, part-time) | Various international projects**

\* detailed background: <https://www.linkedin.com/in/valon-raca/>

02/2006 – 04/2011

**Software Developer / Software Architect | CSE Shpk, Prishtina, Kosovo**

- System Architect & Team Leader
  - Time Attendance Control System (Client: Kosovo Gov't, Daily users: 40000)
- System Architect & Project Manager
  - Kosovo Civil Registry (Client: Kosovo Gov't, Daily users: 1000, web-interface open to general public)
  - Wealth Declaration System (Client: Anti-Corruption Agency)
  - Operational Log System (Client: Kosovo Police)
  - Pharmaceutical Management System (Client: Kondirolli Pharmaceuticals)
- Software developer
  - Human Resources and Asset Management
  - Digital Archive
  - NGO Management System

## **RESEARCH AND COOPERATION PROJECTS**

07/2012 – 07/2015

**Project Assistant & Coordinator | InWaterSense, Prishtina, Kosovo**

- Partner coordinator and project assistant: Intelligent Wireless Sensor Networks for Monitoring Surface Water Quality (InWaterSense)
- Project writing contributor.
- A joint project of University of Prishtina, Kosovo; Technical University of Vienna, Austria; University of Duisburg-Essen, Germany; Linnaeus University, Sweden and University College Cork, Republic of Ireland.
- Co-financed from the EU funds of Instrument of Pre-Accession (IPA) and University of Prishtina

01/2012 – 04/2013

**Developer | EU FP7 Project: Supporting Dialogue and Cooperation between Europe and Kosovo in Collaborative ICT R&D**

- Software developer

01/2009 – 01/2012

**Member of Steering Committee | International Conference on Free and Open Source Software, Prishtina, Kosovo**

- Organization of the conference on free and open source software
- Chair of Local Arrangements Committee

## **HONORS AND AWARDS**

- Academic Scholarship: OeAD (Österreichischer Austauschdienst) HigherKos Grant for research stay (2013)
- Outstanding Student Award (2004)

## RESEARCH AREAS

### Parallel Computing and High Performance Computing

- HPC Algorithms and Applications
- Cluster computing
- Multicore and Many-core architectures
- Massively Parallel Computing with GPGPUs (OpenCL, CUDA)
- Hybrid Computing (MPI+OpenMP+OpenCL/CUDA)
- Energy-efficient computing

## QUALIFICATIONS AND SKILLS

### Teaching qualifications

- Special training for teachers: „In die universitäre Lehre starten - Basisqualifizierung für Einsteiger/innen“, Center for Teaching and Learning, University of Vienna, Austria

### Technology summary

- Programming: C/C++ (C++11, C++14), Java, Python (2002-2019, senior level)
- Parallel programming: MPI, OpenMP, OpenCL, CUDA (2012-2019, senior level)
- Scientific Computing and Deep Learning: TensorFlow (2018-2019, some experience)
- Web programming: PHP, ASP .NET, JavaScript, HTML, CSS (2005-2019, senior level)
- Database development and design: MSSQL, MySQL (2005-2019)
  - Microsoft Certified IT Professional (DB Admin), Microsoft Certified Technology Specialist (DB Admin), Microsoft Certified Technology Specialist (DB Developer) (2008)
- Operating Systems, Resource Management, Virtualization: Linux, SLURM, Sun Grid Engine, Microsoft Hyper-V (2010-2018, experienced)
- Network management
  - CISCO certified CCNA 1, CCNA 2 (2005)

### Languages

- Albanian, mother-tongue
- English, excellent knowledge
- German, basic knowledge
- Serbo-Croatian, excellent knowledge

## PUBLICATIONS

- Raca V., Mehofer E., Scholz B., Seeun W.U., "Optimal Scheduling for Deploying Work Packages on Heterogeneous Distributed System" [submitted], 2019.
- Raca V., Mehofer E., "clusterCL: Comprehensive Support for Multi Kernel Data-Parallel Applications in Heterogeneous Asymmetric Clusters", [submitted], 2019.
- Raca V., Mehofer E., "Implementing HPC Applications with a Framework supporting Heterogeneous Asymmetric Clusters," [submitted], 2019.
- Raca V., Mehofer E., Hudec M., "Optimal Time and Energy Efficient Work Distributions in Heterogeneous Systems," in 24th EuroMicro International Conference on Parallel, Distributed and Network-based Processing, Heraklion, Crete, Greece, 2016.
- Raca V., Mehofer E., "Efficiency Considerations in Heterogeneous Cluster Systems," in 18. Kolloquium Programmiersprachen und Grundlagen der Programmierung, Kaernten, Austria, 2015.
- Raca V., Mehofer E., "Device-Sensitive Framework for Handling Heterogeneous Asymmetric Clusters Efficiently," in 27th International Symposium on Computer Architecture and High Performance Computing, Florianopolis, Brazil, 2015.

- Ahmedi L., Bytyci E., Rexha B., Raça V. - Improving students learning process by analyzing patterns produced with data mining methods, International Journal of Education and Information Technologies, ISSN: 2074-1316, Issue 3, Volume 7, pp. 90 – 97, 2013.
- Ahmedi L., Bytyci E., Rexha B., Raça V. - Applying Data Mining to Compare Predicted and Real Success of Secondary School Students, International Conference on Applied Informatics and Communications, ISBN: 978-1-61804-113-5, Istanbul, Turkey, pp. 178 – 181, 2012.
- Rexha B., Raça V., Dika A. – Extending Kosovo Civil Registry String Searching Algorithm, International Journal of Computers and Communications, ISSN: 2074-1294, Issue 1, Volume 6, pp. 26 – 34, 2012.
- Rexha B., Raça V., Dika A. - Enhancement of Soundex String Matching Algorithm for Kosovo Civil Registry Information System, International Conference on Recent Advances in Computers, Communications, Applied Social Science & Mathematics, ISBN: 978-1-61804-030-5, Barcelona, Spain, pp. 206 – 211, 2011.
- Rexha B., Lajqi H., Qerimi E., Raça V. - Building Governmental Certification Authority using OpenSSL, Software Freedom Kosova, Prishtina, 2009.