PAUL METZGER

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RESEARCH INTERESTS

Pattern Oriented Parallel Programming Language Models (Algorithmic Skeletons), Parallel Programming, High Performance Computing

EDUCATION

09/2017 – Present **Ph.D. in Informatics**, University of Edinburgh, UK
Advisors: Murray Cole, Christian Fensch

09/2016 – 09/2017 **M.Sc. by Research in Pervasive Parallelism**, University of Edinburgh, UK
Grade: Distinction (Highest)

09/2015 – 09/2016 **M.Sc. in Informatics**, University of Edinburgh, UK
Specialisation: Computer Systems & High Performance Computing
Grade: Distinction (Highest)

10/2011 – 10/2014 **B.Sc. in Software Engineering**, University of Stuttgart, Germany

RESEARCH EXPERIENCE

09/2017 – Present **Research Internship** at the University of Turin in Italy

- Member of Marco Aldinucci's parallel programming group.
- I investigate grain sizes and communication overheads in the context of real time systems.

09/2016 – 09/2017 **M.Sc. by Research Thesis** : "Towards Computation Class Specific Optimisations for NUMA Systems"

- Investigated NUMA optimizations for stencil computations with NAS-PB and Rodinia benchmarks.
- Learned about page placement schemes for NUMA systems and how to use Intel V-Tune.

06/2016 – 09/2017 **M.Sc. Thesis**: "Improved Skeleton APIs for Real World Applications"

- Investigated a high-level API design for stencil computations.
- Learned about different flavours of stencil computations: Gauss-Seidel, Red-Black, Multigrid, etc.
- Learned about optimizations for stencil computations.

05/2014 – 10/2014 **Research Internship** at Lancaster University in the United Kingdom
The research group in Lancaster works in an unrelated field.

Publications & Posters

2017 Paper under review for ISPASS 2018: "Performance Analysis of Computation Class Specific Optimizations for NUMA Systems"

2017 Poster about "Plastic Algorithmic Skeletons" presented at the IPDPS Ph.D. Forum and the ACACES HiPEAC Summer School.

Grants & Scholarships

2017 Grant for a HiPEAC Research Internship at the University of Turin.

2017 Grant for the Advanced Computer Architecture and Compilation for High-Performance and Embedded Systems (ACACES) HiPEAC Summer School.

2016 Scholarship for a Ph.D. and M.Sc. by Research at the Centre for Doctoral Training in Pervasive Parallelism at the University of Edinburgh.

2013 The "Deutschland Stipendium" which is a scholarship for gifted and highly productive students granted by the German Federal Ministry of Education and Research.

Work Experience

01/2015 – 08/2015 **Graduate Software Developer** at Sentric Music in the United Kingdom
Product owner in a SCRUM team for a web service. Contributed to the maintenance of the web service and built a tool with C# for reading out an online database.

06/2012 – 02/2014 **Intern and Software Developer** (part time) at FESTO in Germany
Developed and maintained the back-end of a web service. Used C# and SQL.

Technical Skills

C/C++, Python, OpenMP, NUMA, Stencil Computations, Parallel Design Patterns, Intel V-Tune

Relevant technologies that I used during my first M.Sc.: MPI, MapReduce

Languages

German (Native language), English (Fluent)