



Dr.-Ing. Arya Mazaheri

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EDUCATION

November 2021 – Present

PostDoc in Computer Science

Technische Universität Darmstadt

August 2015 – October 2021

PhD degree in Computer Science

Technische Universität Darmstadt

- Thesis: Performance engineering of data-intensive applications
- Passed with distinction (Summa cum laude)

March 2019 – July 2019

Visiting researcher

Iowa State University

Sept 2012 – Jan 2015

Master's degree in Computer Architecture

Isfahan University of Technology (IUT), collaborated with RWTH Aachen University

- Thesis: Detecting parallel patterns in shared-memory applications
- GPA: 18.11/20
- Passed with distinction

Sept 2008 – Sept 2012

Bachelor's degree in Software Engineering

Isfahan University of Technology (IUT)

- Thesis: Implementing web-based visualization platform for huge datasets
- GPA: 16.96/20
- Passed with distinction

SELECTED PUBLICATIONS

- Taylan Özden, Tim Beringer, **Arya Mazaheri**, Hamid Mohammadi Fard, Felix Wolf: "ElastiSim: A Batch-System Simulator for Malleable Workloads", International Conference on Parallel Processing (ICPP), Bordeaux, France, August 2022.
- Sixing Yu, **Arya Mazaheri**, Ali Jannesari: "Topology-Aware Network Pruning using Multi-stage Graph Embedding and Reinforcement Learning", International Conference on Machine Learning (ICML), Baltimore, Maryland, USA, July 2022.
- Sixing Yu, **Arya Mazaheri**, Ali Jannesari: "Auto Graph Encoder-Decoder for Neural Network Pruning", International Conference on Computer Vision (ICCV), Montreal, Canada, October 2021.
- **Arya Mazaheri**, Tim Beringer, Matthew Moskewicz, Felix Wolf, Ali Jannesari: "Accelerating Winograd Convolutions using Symbolic Computation and Meta-programming", 15th EuroSys Conference, Heraklion, Crete, Greece, April 2020.
- **Arya Mazaheri**, Johannes Schulte, Matthew Moskewicz, Felix Wolf, Ali Jannesari: "Enhancing the Programmability and Performance Portability of GPU Tensor Operations", 25th Euro-Par Conference, Göttingen, Germany, August 2019, (**best paper award**).
- **Arya Mazaheri**, Felix Wolf, Ali Jannesari: "Unveiling Thread Communication Bottlenecks Using Hardware-Independent Metrics", 47th International Conference on Parallel Processing (ICPP), Eugene, OR, USA., ACM, August 2018.
- **Arya Mazaheri**, Ali Jannesari, Abdolreza Mirzaei, Felix Wolf: "Characterizing Loop-level Communication Patterns in Shared Memory Applications", 44th International Conference on Parallel Processing (ICPP), 2015.

WORK EXPERIENCE

- Oct 2022 – Present **Founder**
PanocularAI, Germany
- Leading the technical and business development.
 - Developed an automated multi-task learning framework, BEV generation
 - Raised 77k Euros from hessian.AI
- Aug 2015 – Present **Research Associate**
Technische Universität Darmstadt, Germany
- Developing a full-stack AI platform to accelerate and scale deep-learning training on distributed systems, design space exploration, and performance portable deployment on edge devices.
 - Experienced: C/C++, Python, PyTorch, CUDA, LLVM
- Jan 2016 – Oct 2016 **Software Engineer**
Exabyte.io, San Francisco, USA
- Responsible for developing a job orchestration framework
 - Developing a modular framework for extracting high level characteristics of materials
 - Experienced: Python, Saltstack, Vagrant, Docker, Meteor.js, Atlassian JIRA
- Mar 2014 – Aug 2015 **Co-Founder**
Persian High Performance Computing, Isfahan, Iran
- Providing an HPC platform based on Amazon AWS cloud computing
- Sept 2010 – Mar 2014 **Research Assistant**
SheikhBahayi National High Performance Computing Center, Isfahan, Iran
- Configuring the Infiniband network, Lustre storage server and GPU Cluster
 - Provisioning high performance data visualization on the cluster with remote online access

TEACHING & SUPERVISION EXPERIENCE

Teaching Assistant

- 2018 – 2020 *Multi-threading in C++; Lecture*, Prof. Dr. F. Wolf, Informatik, TU Darmstadt
- 2017 – 2022 *Parallel Programming Lab & Seminar*, Prof. Dr. F. Wolf, Informatik, TU Darmstadt
- Winter 2016 *Software Engineering for Parallel Programs; Seminar*, Prof. Dr. F. Wolf, Informatik, TU Darmstadt
- Winter 2015 *Software Engineering for Multicore Systems; Lecture*, Dr. A. Jannesari, Informatik, TU Darmstadt

Thesis Supervision

- 2016 – 2023 Supervised 12 Bachelor and Master theses.

AWARDS & HONORS

- Oct 2023 Awarded 77k Euros through Lean AI startup funding, hessian.AI
- Mar 2023 Won the 3rd place in AI Startup Competition, hessian.AI
- Aug 2022 Won the German-Japanese Tech Innovation Challenge and secured a pilot project with Mitsubishi Electric
- Jun 2022 Won the 2nd place in Open Idea Competition, hessian.AI
- Apr 2021 Awarded 100k Euros through Software Campus program to lead a research project
- Aug 2019 Won the best paper award in EuroPar conference, Göttingen, Germany
- Apr 2015 Awarded participation in Plug and Play Tech center's international startup acceleration program, Sunnyvale, California, USA
- Apr 2015 Won the TEDxKish prize for high-tech innovative entrepreneurship startup
- Feb 2012 Ranked 2nd in the 4th entrepreneurship business plan festival
- Nov 2009 Ranked 9th in the ACM-ICPC regional contest in west Asia, Tehran site, Iran

ACADEMIC COMMUNITY SERVICE

- 2024 Technical PC member of GrAPL'24.
2023 Shadow PC member of EuroSys'24.

ATTENDED ACADEMIC & TRAINING EVENTS

- 2021
- Software Campus leadership training program
 - Cultural Awareness and Decision Making, Huawei
 - Better understand yourself and others (Insights Discovery Workshop), Merck
 - Basics for future managers, Holtzbrinck
 - Innovation Management, Huawei
 - Change Management, Trumpf
 - Agile project management, DATEV Agile Camp
- 2020
- HPC Technology Transfer Training Course, from academic research to business, HLRS, Stuttgart, Germany
- 2018
- ACASES Summer School (organized by HiPEAC) - 14th International Summer School on Advanced Computer Architecture and Compilation for High-Performance and Embedded Systems, Fiuggi, Italy
- 2017
- PUMPS Summer School - 8th International Summer School on Programming and Tuning Massively Parallel Systems, Barcelona, Spain
 - GPU Technology Conference (GTC Europe), Munich, Germany
- 2016
- Working in a German scientific environment, TU Darmstadt, Germany

SKILLS

Programming

C/C++, Python
OpenCL, CUDA, Vulkan

Compilation tools

LLVM, Intel Pin, Valgrind

AI tools & frameworks

PyTorch, PyTorch Lightning, TVM

LANGUAGES

English – Fluent
German – Intermediate level (B2)
Persian – Native speaker

REFERENCES

Prof. Dr. Felix Wolf

Parallel Programming Laboratory
Technische Universität Darmstadt
✉ felix.wolf@tu-darmstadt.de

Dr.-Ing Ali Jannesari

Computer Science Department
Iowa State University
✉ jannesar@iastate.edu