

# HOSSEIN HAJIPOUR

## PRESENT ADDRESS

Stuhlsatzenhaus 5  
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## CONTACT INFORMATION

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## EDUCATION

**Saarland Univeristy**, Saarbruecken, Germany Sep 2018 - Dec 2023 (Expected)

**CISPA Helmholtz Center for Information Security**

Ph.D. in Computer Science

**Advisor** : Prof. Mario Fritz

**Saarland Univeristy**, Saarbruecken, Germany Oct 2015 - Jul 2018

M.Sc. in Computer Science

**Thesis**: Weakly-supervised Surface Reconstruction Using Floating Radial Basis Functions.

**Advisor** : Prof. Christian Theobalt

**Persian Gulf University**, Booshehr, Iran Feb 2010 - June 2014

B.Sc. in Computer Engineering- Software

**Thesis**: A Novel Social-inspired Metaheuristic Algorithm.

**Advisor** : Dr. Habib Rostami

## OBJECTIVE

Building intelligent systems that are safe and interpretable, capable of understanding and generating code in multiple languages using various types of inputs, including natural language, programs, and I/O examples.

## RESEARCH INTEREST

ML for Code Generation and Understanding, Safe ML for Code, Machine Learning, Computational Intelligence.

## PUBLICATION

1. **Hossein Hajipour**, Thorsten Holz, Lea Schönherr, and Mario Fritz. "Systematically Finding Security Vulnerabilities in Black-Box Code Generation Models." February 2023, (Submitted).
2. **Hossein Hajipour**, Ning Yu, Cristian-Alexandru Staicu, and Mario Fritz. "SimSCOOD: Systematic Analysis of Out-of-Distribution Behavior of Source Code Models." October 2022, (Submitted).
3. **Hossein Hajipour**, Apratim Bhattacharya, Cristian-Alexandru Staicu, and Mario Fritz. "SampleFix: Learning to Generate Functionally Diverse Fixes." MLiSE at ECML PKDD'21, Springer. Sep 2021.
4. **Hossein Hajipour**, Mateusz Malinowski, and Mario Fritz. "IReEn: Reverse-Engineering of Black-Box Functions via Iterative Neural Program Synthesis." MLiSE at ECML PKDD'21, Springer. Sep 2021.
5. **Hossein Hajipour**, Apratim Bhattacharyya, and Mario Fritz. "SampleFix: Learning to Correct Programs by Efficient Sampling of Diverse Fixes." CAP at NeurIPS'20. Dec 2020.
6. **Hossein Hajipour**, Hamed B.Khourmuji, and Habib Rostami. "ODMA: A Novel Swarm-Evolutionary Metaheuristic Optimizer Inspired by Open Source Development Model and Communities." Soft Computing, Springer. 2016.
7. Hamed B.Khourmuji, **Hossein Hajipour**, and Habib Rostami. "BODMA: A Novel Metaheuristic Algorithm for Binary Optimization Problems Based on Open Source Development Model Algorithm." IST'14. Sep 2014.

8. **Hossein Hajipour**, Hamed B.Khourmuji, Habib Rostami, and Rozita J.Oskouei. "ODMA : A New Metaheuristic Optimization Algorithm Based On Open Source Development Model." ISDA'12. Nov 2012.

## ACADEMIC EXPERIENCE

1. Reviewing: ACL'23, S&P'23, EuroS&P'22, CCS'22, EMNLP'(22, 23).
2. Teaching Assistant of "Machine Learning in Cyber Security." CISA Helmholtz Center for Information Security. 2018, 2019, 2020.
3. Research Assistant at Graphics, Vision and Video Group. Max Planck Institute for Informatics. Jan 2018 - Aug 2018.
  - Developing a novel learning-based approach for monocular reconstruction of arbitrary 3D shapes.
4. Research Assistant at High Dynamic Range Imaging Group. Max Planck Institute for Informatics. Apr 2017 - Dec 2017.
  - Developing a deep learning approach for automatic rendering artifacts correction of 2D images.
5. Instructor of "Introduction to Modern Web Application." ICT Institute of Persian Gulf University. 2015.
6. Teaching Assistant of "Algorithm Design." and "Data Structures and Algorithms.", Persian Gulf University. 2014, 2013.
7. Summer research internship at Soft Computing group. Persian Gulf University. 2013.

## HONORS AND AWARDS

- Fully funded Ph.D. studentship from CISA Helmholtz Center for Information Security, 2018.
- German-French Ph.D. Workshop on Secure Big Data scholarship, 2018.
- Master thesis scholarship from Saarland University. 2018.
- Summer undergraduate research internship grant, Persian Gulf University, 2013.
- Ranked 2nd among about 50 computer engineering students during the bachelor's degree at Persian Gulf University.

## PROFESSIONAL EXPERIENCE

- **Back-end Developer**, Cluster of Excellence MMCI. Oct 2015 - Mar 2017.
  - Project: Implementing a bot to crawl and aggregate information of more than 1000 web pages.
- **Full-stack Developer**, ICT Institute of Persian Gulf University. Oct 2014 - Sep 2015.
  - Project: Designing and implementing a social network to support more than 1M users.

## SKILLS

- **Programming**
  - Python , C, C++ , CUDA.
- **Tools/Frameworks**
  - PyTorch, Transformers, NumPy, SciPy, Git.
- **Theory**
  - Deep Learning, Program Synthesis, Reinforcement Learning, Probabilistic Graphical Models.
- **Languages**
  - English (Fluent), German (Basic), Farsi/Persian (Native).