Goran Piskachev

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Languages: Macedonian (native), German (C1), English (C2), Spanish (A2)

PROFESSIONAL EXPERIENCE

Applied Scientist, Amazon Web Services — October 2022 – Present
Berlin, Germany (2022-2025) and New York, USA (2026-Present)
- Leading initiatives in data protection technologies, including sensitive data detection and data sanitization solutions, contributing to the enhancement of AWS's privacy engineering practices.
- Acted as a Privacy Bar Raiser, advising and guiding development teams to ensure privacy standards are integrated throughout the software development lifecycle.
- Expanded focus to responsible AI practices, including research and application of methodologies to ensure security, transparency, and accountability in AI systems.

Associate Editor, IEEE Software Magazine — April 2024 – Present
Virtual
- Responsible for managing the review process for submissions in the areas of static analysis and programming paradigms.
- Coordinate with reviewers, oversee the evaluation of manuscripts, and provide final publication recommendations to the Editor-in-Chief.

Team Manager, Fraunhofer IEM — January 2022 – September 2022
Paderborn, Germany
- Led a team of four in developing secure software tools and services, focusing on static program analysis and software security. Contributed to strategic planning for secure software engineering initiatives.
- Managed an industry collaboration project, ensuring systematic technical analysis, clear reporting, and delivery of innovative static analysis solutions.

Applied Scientist Intern, Amazon Web Services — January 2021 – April 2021
Virtual
- Contributed to an existing taint analysis tool by improving its callgraph construction.

Research Associate, Fraunhofer IEM — September 2015 – December 2021
Paderborn, Germany
- Conducted applied research in static and dynamic program analysis, collaborating with industry partners (e.g., Amazon, AXA, Software AG) on security-by-design initiatives.
- Led the SecuCheck project, developing configurable taint analysis tools.
- Supervised student theses, delivered academic seminars, and authored technical proposals for funded projects.

Student Research Assistant, Fraunhofer IPT — January 2015 – July 2015
Paderborn, Germany

Student Research Assistant, Heinz Nixdorf Institut, Software engineering group — February 2013 – December 2014
Paderborn, Germany

Research Intern, Imperial College London, Theoretical systems biology group — July 2012 – August 2012
London, UK

Lab Demonstrator, UKIM Skopje, Faculty of Computer Science and Engineering — February 2012 – June 2012
Skopje, North Macedonia

Software Development Intern, Koios Savetovanje — August 2011 – October 2011
Zagreb, Croatia

Software Development Intern, Alvila — July 2011 – August 2011
Prague, Czech Republic

EDUCATION

PhD in Computer Science, Paderborn University — February 2016 – December 2022
Paderborn, Germany
- Thesis: Adapting Taint Analyses for Detecting Security Vulnerabilities (summa cum laude), supervisor: Prof. Dr. Eric Bodden

MSc in Computer Science, Paderborn University — October 2012 – June 2015
Paderborn, Germany

Electrical Engineering Degree, Ss. Cyril and Methodius University — October 2008 – June 2012
Skopje, North Macedonia

International Baccalaureate Diploma Programme, Josip Broz Tito High School — September 2006 – August 2008
Skopje, North Macedonia

AWARDS

- Best Engineering Paper Award, SCAM 2022: To what extent can we analyze Kotlin programs using existing Java taint analysis tools?
- Software Campus Grant (100.000 EUR) for the project SecuCheck by the German Ministry of Education and Research, 2018
- Erasmus Mundus Scholarship for Master Studies (European Union), 2012-2015
- IT-Scholarship for Engineering Studies by the Macedonian Ministry of Education, 2009-2012

PUBLICATIONS

Ranjith Krishnamurthy, Oshando Johnson, **Goran Piskachev**, and Eric Bodden. *From Detection to Prevention: Explaining Security-Critical Code to Avoid Vulnerabilities*. The IDE Workshop (collocated at ICSE), 2026.
Oshando Johnson, **Goran Piskachev**, Ranjith Krishnamurthy, and Eric Bodden. *Detecting Security-Relevant Methods using Multi-label Machine Learning*. The IDE Workshop (collocated at ICSE), 2024.
Subarno Banerjee, Siwei Cui, Michael Emmi, Antonio Filieri, Liana Hadarean, Peixuan Li, Linghui Luo, **Goran Piskachev**, Nicolás Rosner, Aritra Sengupta, Omer Tripp, Sean Tout, and Jingbo Wang. *Compositional Taint Analysis for Enforcing Security and Privacy Policies at Scale*. Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE), 2023.
Goran Piskachev, Matthias Becker, and Eric Bodden. *Can the configuration of static analyses make resolving security vulnerabilities more effective? A user study*. Empirical Software Engineering Springer (EMSE) and Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE), 2023.
Linghui Luo, **Goran Piskachev**, Ranjith Krishnamurthy, Julian Dolby, Eric Bodden, and Martin Schäf. *Model Generation For Java Frameworks*. International Conference on Software Testing, Verification and Validation (ICST), 2023.
Ben Liblit, Linghui Luo, Alejandro Molina Ramirez, Rajdeep Mukherjee, Zachary Patterson, **Goran Piskachev**, Martin Schäf, Omer Tripp, and Willem Visser. *Shifting left for early detection of machine-learning bugs*. Formal Methods Industry Day (FM), 2023.
Goran Piskachev, Stefan Dziwok, Thorsten Koch, Sven Merschjohan, and Eric Bodden. *How far are German companies in improving security through static program analysis tools?* IEEE Secure Development Conference (SecDev), Atlanta, USA, October 2022.
Ranjith Krishnamurthy, **Goran Piskachev**, and Eric Bodden. *To what extent can we analyze Kotlin programs using existing Java taint analysis tools?* 22nd IEEE International Working Conference on Source Code Analysis and Manipulation (SCAM), Limassol, Cyprus, October 2022. Best engineering paper award.
Goran Piskachev, Johannes Späth, Ingo Budde, and Eric Bodden. *Fluently specifying taint-flow queries with fluentTQL*. Empirical Software Engineering Springer (EMSE) and Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE), 2022.
Linghui Luo, Felix Pauck, **Goran Piskachev**, Manuel Benz, Ivan Pashchenko, Martin Mory, Eric Bodden, Ben Hermann, and Fabio Massacci. *TaintBench: Automatic Real-World Malware Benchmarking of Android Taint Analyses*. Empirical Software Engineering Springer (EMSE), 2021, and International Conference on Software Engineering (ICSE), Pittsburgh, USA, May 2022.
Goran Piskachev, Ranjith Krishnamurthy, and Eric Bodden. *SecuCheck: Engineering configurable taint analysis for software developers*. 21st IEEE International Working Conference on Source Code Analysis and Manipulation (SCAM), 2021.
Sriteja Kummita, **Goran Piskachev**, Johannes Späth, and Eric Bodden. *Qualitative and Quantitative Analysis of Callgraph Algorithms for PYTHON*. The First International Conference on Code Quality, Moscow, Russia, March 2021.
Lars Hermerschmidt, Andreas Straub, and **Goran Piskachev**. *Language-agnostic Injection Detection*. LangSec Workshop (IEEE S&P), San Francisco, USA, May 2020.
Goran Piskachev, Lisa Nguyen Quang Do, Oshando Johnson, and Eric Bodden. *SwanAssist: Semi-Automated Detection of Code-Specific, Security-Relevant Methods*. Demonstration Track at Automated Software Engineering (ASE), San Diego, USA, November 2019.
Goran Piskachev, Tobias Petrasch, Johannes Späth, and Eric Bodden. *AuthCheck: Program-state Analysis for Access-control Vulnerabilities*. Workshop on Tools for Automatic Program Analysis (TAPAS), Porto, Portugal, October 2019.
Goran Piskachev, Lisa Nguyen, and Eric Bodden. *Codebase-Adaptive Detection of Security-Relevant Methods*. International Symposium on Software Testing and Analysis (ISSTA), Beijing, China, July 2019, and Technical Report, Heinz Nixdorf Institute, Paderborn, Germany, March 2019.

Goran Piskachev. *Transparent Static Analysis for the Detection of Security Vulnerabilities.* ISSTA/ECOOP 2018 Doctoral Symposium, Amsterdam, The Netherlands, July 2018.
Agim Bajrami, Vladimir Zdraveski, Sonja Filiposka, **Goran Piskachev**, and Dimitar Trajanov. *Performance modeling for a Web GRID architecture.* Telecommunications Forum (TELEFOR), Belgrade, Serbia, 2011.
Goran Piskachev, Georgina Mirceva, and Danco Davcev. *Novel consensus approach for protein active sites detection.* International Scientific Conference, Computer Science, Ohrid, Macedonia, July 2011.

TALKS

- **Policy-Driven Sensitive Data Detection**, 20th Paderborner Tag der IT-Sicherheit, Paderborn, Germany, September 2026.
- **PRIDE Workshop**, ECOOP, Berlin, June 2022.
- **Replicability of software engineering artifacts**, Paderborn University, Paderborn, October 2021.
- **ROSE Festival: Open Science Contribution, Artifact SecuCheck**, ROSE Festival (Recognizing and Rewarding Open Science in SE), Luxembourg (virtual), September 2021.
- **Guest lecture at DECA 2**, Paderborn University, Paderborn, July 2021.
- **Configuring Static Analysis Tools**, Kassel Security Meetup, Kassel, January 2020.
- **How to configure static analysis through machine learning**, Heise devSec, Heidelberg, September 2019.

TEACHING AND SUPERVISION

Supervision at Paderborn University
- 2023: Master thesis, Explorative research on using LLVM and PhASAR to run data-flow analyses on Swift
- 2022: Seminar Secure Systems Engineering (WS21/22), Understanding and evaluating MarianaTrench
- 2022: Master thesis, Explorative research on taint analysis for Kotlin
- 2021: Master thesis, Soot-based configuration generator for analysis writers (co-supervised)
- 2021: Master thesis, Extending fluentTQL: Specifying taint-flows through a domain-specific language
- 2020: Master thesis, Evaluation of Call Graph Construction for Python (co-supervised)
- 2020: Master thesis, Transformation of Taint and Typestate Specifications (co-supervised)
- 2020: Seminar Secure Systems Engineering (WS19/20), Transforming Taint flow Specifications into Correct Usage of APIs (co-supervised)
- 2020: Seminar Secure Systems Engineering (WS19/20), Survey on Domain Specific Languages for Taint Analysis
- 2019: Pro-Seminar Softwareentwicklung fuer software-intensive Systeme (SS19), Representing Source Code in Machine Learning for Code Analysis
- 2019: Seminar Advanced Software Engineering Concepts (SS19), Integrating Feedback in the IDE
- 2019: Master thesis, Detection of methods of interest for security based on software documentation
- 2019: Seminar Secure Systems Engineering (WS18/19), Survey on adaptive static analysis
- 2018: Bachelor thesis, Authentication and authorization checker for Java web systems
- 2018: Bachelor thesis, Evaluation of machine learning algorithms for automatic detection of security-relevant methods
- 2018: Seminar Secure Systems Engineering (WS17/18), Inferring specifications for taint-style vulnerabilities
- 2017: Seminar Secure Systems Engineering (WS16/17), Security vulnerabilities in Android's inter-app communication

Teaching assistance
- Seminar: Replicability of software engineering artifacts (SS21)
- Model-based software development (SS17)
- Model-driven software development (WS16/17)
- Model-driven software development (WS15/16)

SERVICE

Editorial. Associate Editor (Static Analysis, Programming Paradigms), IEEE Software – since April 2024.
Organizing. Secure Development Conference (SecDev '27) – Vice General Chair; ECOOP 2020 – Poster Session Co-Chair; ECOOP 2019 – Doctoral Symposium Co-Chair.
Program Committees. CAIN 2026, 2027; ICPC 2027; MOBILESoft 2025, 2026, 2027; IDE Workshop (collocated at ICSE) 2025, 2026, 2027; SecDev 2023, 2024, 2025, 2026; SAS 2025; ASE 2024; SANER 2024; ECOOP 2020; MSR 2021.
Journal Reviewing. TOSEM 2022, 2024, 2025; JSS 2025, 2026; CoSe 2025, 2026; INFSOF 2025; ASE Journal 2024, 2025; SN Computer Science (Springer) 2024; Cluster Computing (Springer) 2024; EMSE 2020, 2022; SPE 2020.
Artifact Evaluation. ICSE 2024, 2025, 2026; PLDI 2020, 2021, 2022, 2023, 2024; CAV 2023; ESOP 2022, 2023; USENIX Security 2020, 2022; ISSTA 2017, 2018.
External Reviewing. CAV 2024; ICSE 2022; IEEE S&P 2021.