

Univ.-Prof. Dr. Dimitris E. Simos

PD, SMIEEE, FTICA

Curriculum Vitae

August 2025

Univ.-Prof. (academic title)

Priv.-Doz. Dr. (academic degree)

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### Executive Summary

Dr. Dimitris E. Simos holds a **Joint Professorship in Cybersecurity**, established as a state-funded **Endowed Bridge Professorship** (EXDIGIT initiative by the Land of Salzburg). He serves as **Full Professor** at Paris Lodron University of Salzburg (PLUS) and **Senior Lecturer** at Salzburg University of Applied Sciences (FH Salzburg) under a joint appointment since 2025. He is also **Visiting Associate Professor** (non-tenured track, *venia docendi* for Applied Computer Science) with Graz University of Technology as of 2021. He holds a **Guest Researcher** appointment with the US National Institute of Standards and Technology (NIST), where he is also a **Research Member** of its Working Group on "Automated Combinatorial Testing for Software" (ACTS). Before, he was **Key Researcher** for the Applied Discrete Mathematics for Information Security research area with SBA Research located in Vienna at Austria and led its Mathematics for Testing, Reliability and Information Security (MATRIS) research group, which comprised at its peak of 15 research staff members. He served also as the **Head of Strategic Research** at SBA Research responsible for designing, implementing and leading the strategic R&D agenda of the research center. He has been an **Adjunct Lecturer** with Vienna University of Technology, a **Distinguished Guest Lecturer** with Graz University of Technology and a **Visiting Scholar** at University of Bergamo. His research interests include Combinatorial Designs and their applications to Software Testing, Combinatorial Testing in particular, Symbolic Computation and Optimization Algorithms, and all aspects of Information Security. During his career Dimitris has **(co)-authored over 150 papers in Discrete Mathematics and their applications to Computational and Computer Science** and has been awarded the rank of **Fellow of the Institute of Combinatorics and its Applications (FTICA)** and the **Applications of Computer Algebra Early Researcher Award (ACA-ERA)**, on 2012 and 2024, respectively. His research has received national (FFG), European (FP7, H2020, Horizon Europe) and international (US NIST) funding. He supervised or is currently advising 8 Bachelor, 12 Master and 3 PhD students. He (co)-organized or (co)-chaired many international scientific conferences (i.e. ARES, MACIS, ACA, LION, CAI, QRS) and workshops (i.e. IWCT, DOD, MoCrySen) and served on the editorial board of two Springer journals (MCS, ORFO). He is the **Founding Editor** and current **Lead Section Editor** of the Springer Nature Computer Science (SNCS) journal section on combinatorial methods and models in system testing (COMSYT). Last, he served as the **Austrian Delegate** to the United Nations Commission on Science and Technology for Development (UN CSTD) in 2024.

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## Education and Qualifications

- 2021 **Habilitation Degree for Applied Computer Science (Angewandte Informatik).**  
Graz University of Technology, Faculty of Computer Science and Biomedical Engineering, Austria
- 2011 **Ph.D. in Discrete Mathematics and Combinatorics.**  
National Technical University of Athens, Department of Mathematics, Greece
- 2007 **M.Sc. in Applied Mathematical Sciences, Major in Computational Mathematics.**  
National Technical University of Athens, School of Applied Mathematics and Physics, Greece
- 2006 **B.Sc. in Mathematics, Major in Applied Mathematics.**  
University of Athens, Department of Mathematics, Greece

## Academic Career and Professional Recognition

### Primary Academic and Research Positions

- 2025– **Full Professor (Universitätsprofessor § 99 (1) UG),** Paris Lodron University of Salzburg (PLUS), Faculty of Digital and Analytical Sciences (DAS), Department of Computer Science, Salzburg, Austria.
- 2025– **Senior Lecturer,** Salzburg University of Applied Sciences (FH Salzburg), Department of Information Technologies and Digitalisation, Salzburg, Austria.
- 2021–2025 **Key Researcher (Level R4 - Leading Researcher),** Research Center SBA Research, Vienna, Austria.
- 2014–2020 **Key Researcher (Level R3 - Established Researcher),** Research Center SBA Research, Vienna, Austria.
- 2013–2015 **ERCIM Postdoctoral Researcher (Marie Curie Fellow),** Research Center SBA Research, Vienna, Austria.
- 2012–2013 **ERCIM Postdoctoral Researcher (Marie Curie Fellow),** Research Center INRIA Paris-Rocquencourt, Project-Team SECRET, France.
- 2006–2011 **Research Assistant,** National Technical University of Athens, Department of Mathematics, Greece.
- 2005 **Research Intern (Software Engineer),** National Centre for Scientific Research “Demokritos” (NCSR-D), Institute of Material Science, Greece.

### Academic Functions, Research Leadership and Management Roles

- 2025– **Joint Professor of Cybersecurity (Endowed Bridge Professorship - EXDIGIT & State of Salzburg),** Paris Lodron University of Salzburg (PLUS) and Salzburg University of Applied Sciences (FH Salzburg), Austria.
- 2025– **Head of MATRIS Lab,** (Planned as) Joint Research Unit between Paris Lodron University of Salzburg (PLUS) and Salzburg University of Applied Sciences (FH Salzburg), Salzburg, Austria.
- 2025– **Austrian IIASA Council Member,** Representative of Paris Lodron University of Salzburg (PLUS) to the Austrian Academy of Sciences (ÖAW), Vienna, Austria.
- 2024–2025 **Management Board Member (Authorized Signatory),** Research Center SBA Research, Vienna, Austria.
- 2025 **Scientific Director (Declined),** Research Center SBA Research, Vienna, Austria.
- 2022–2025 **Head of Strategic Research,** Research Center SBA Research, Vienna, Austria.
- 2017–2025 **MATRIS Group Leader,** Research Center SBA Research, Vienna, Austria.

### Visiting Academic and Research Appointments

- 2021– **Visiting Associate Professor (Privatdozent),** Graz University of Technology, Faculty of Computer Science and Biomedical Engineering, Institute for Software Technology (IST), Austria.
- 2020– **NIST Guest Researcher,** National Institute for Standards and Technology (NIST), Information Technology Laboratory (ITL), Applied Computational Mathematics Division (ACMD), USA.
- 2017 **Visiting Scholar,** University of Bergamo, Department of Management, Information and Production Engineering, Italy.
- 2014–2020 **Adjunct Lecturer (Universitätslektor),** Technische Universität (TU) Wien, Faculty of Informatics, Institute of Information Systems Engineering (ISE), Austria.
- 2006–2011 **Teaching Assistant & Lab Instructor,** National Technical University of Athens, School of Applied Mathematics and Physics, Greece.
- 2004–2005 **Lab Assistant & Co-Instructor,** University of Athens, Department of Mathematics, PC Lab, Greece.

## Honors, Awards and Prizes

- 2025 **Joint (Full) Professorship Cyber Security**, Full University Professorship (§ 99 (1) UG, for Cyber Security) at Paris Lodron University of Salzburg (PLUS) & University of Applied Sciences Professorship (FHG, for Cyber Security) at Salzburg University of Applied Sciences (FH Salzburg), Austria.
- 2025 **Houska Prize 2025 Nominee**, Nomination for the “Combinatorial Security Testing” Research Project in the Non-University Research Category, Sponsored by B&C Private Foundation (Austria’s largest Privately-awarded Prize Fund for Application Driven-research), Austria.
- 2025 **IEEE Senior Member (SMIEEE)**, Institute of Electrical and Electronics Engineers (IEEE), Region 8, Europe.
- 2024 **ICTSS 2024 Best Paper Award**, 36th International Conference on Testing Software and Systems, UK.
- 2024 **Research Center Scientific Directorship**, The Austrian Research Promotion Agency (FFG) and the Austrian Government (BMIMI, BMWET, Stadt Wien), Awarded as part of a successful application for the renewal cycle 2025-2029 of the COMET K1 Program Line: Competence Centers for Excellent Technologies (Austria’s largest Publicly-funded Program for Non-University Research) for the Research Center SBA Research.
- 2024 **The Applications of Computer Algebra Early Researcher Award 2024 (ACA-ERA 2024) Prize**, Sponsored by Maplesoft, Wolfram, ACM SIGSAM, CARGO Lab and CCM, ACA Working Group (ACA-WG), Cuba.
- 2024 **Austrian Delegate to the United Nations Commission on Science and Technology for Development (UN CSTD)**, Workshop on harnessing Science, Technology and Innovation (STI) for Disaster Risk Reduction (DRR), Philipinnes.
- 2017 **Distinguished Guest Lecturer**, Graz University of Technology, Faculty of Computer Science and Biomedical Engineering, Institute for Software Technology, Austria.
- 2012 **Fellow of the ICA (FTICA)**, Institute of Combinatorics and its Applications (ICA), Canada.
- 2012 **ECRYPT II Grant: European Network of Excellence in Cryptology II**, ICT Programme: European Commission under the Action of Framework 7, Code-based Cryptography Workshop.
- 2011 **ERCIM “Alain Bensoussan” Fellowship**, The European Research Consortium for Informatics and Mathematics (ERCIM) co-funded by the European Commission under an FP7 Marie-Curie action.
- 2011 **Certificate Award**, National Military University (NMU) “Vassil Levski” and the Veliko Tarnovo University (VTU) “St. Cyril and St. Methodius”, Bulgaria.
- 2010, 2011 **SCIENCE Grant: Symbolic Computation Infrastructure for Europe**, SCIENCE Project: European Commission under the Action of Framework 6, RISC Transnational Access Program.
- 2010 **Associate Fellow of the ICA (AFTICA)**, Institute of Combinatorics and its Applications (ICA), Canada.
- 2008 **SCIENCE Grant: Symbolic Computation Infrastructure for Europe**, SCIENCE Project: European Commission under the Action of Framework 6, RISC Summer School.
- 2008–2011 **Three-year Ph.D. Research Scholarship Grant**, Sponsored by the Secretariat of the Research Committee of National Technical University of Athens, Greece.
- 2006–2011 **Thomaidio Prize for the Progress of Sciences and Arts**, Six-times Annual Publication Award, Sponsored by Thomaidio Foundation, National Technical University of Athens, Greece.

## Research Projects and Acquisition of Funds

### Project Lead or Principal Investigator (PI)

<b>SBA-K1 NGC</b> 04.2025–03.2029 Scientific Leader (Declined <sup>1</sup> )	<b>SBA-K1 Next Generation Cybersecurity.</b> The Austrian Research Promotion Agency (FFG), Austria <i>COMET K1 Program Line: Competence Centers for Excellent Technologies</i> ✧ Center Volume: 18,545,455 EUR (50% public funding) ✧ Consortium: 13 scientific and 53 industry partners The research center is comprised of three COMET Research Areas: ➤ Discrete Mathematics and Algorithmic Computing (80% share of strategic research) ➤ Secure and Intelligent Software (70% share of strategic research) ➤ Secure Resilient Systems (60% share of strategic research)
<b>SBA-K1 4YE: Area 4</b> 04.2021–03.2025 Research Area Leader	<b>Applied Discrete Mathematics for Information Security.</b> The Austrian Research Promotion Agency (FFG), Austria <i>COMET K1 Program Line: Competence Centers for Excellent Technologies</i>

<sup>1</sup>Declined the positions of scientific lead of the SBA-K1 NGC COMET K1 Program and designated scientific director at SBA Research, due to carrying out the duties of the joint professorship at Paris Lodron University Salzburg and Salzburg University of Applied Sciences from July 1st, 2025

- ✧ Area Volume: 3,965,636 EUR (50% public funding)
- ✧ Consortium: 8 scientific and 18 industry partners
- The research area is comprised of three COMET K1 Projects:
  - Design Theory Framework for the Science of Security (100% share of strategic research)
  - Combinatorial Arrays, Algorithms and Optimization (100% share of strategic research)
  - Combinatorial Security Testing (90% share of strategic research)

**DYNAMO**

10.2021–09.2024

PI

**Combinatorial Interaction Matching with Applications to Security and Data Analysis.**National Institute of Standards and Technology (NIST), US Department of Commerce, USA  
*Measurement Science and Engineering (MSE) Research Grant Programme*

- ✧ Project Volume: 222,000 USD (100% public funding)
- ✧ Consortium: SBA Research

**SBA-K1: Area 4**

04.2017–03.2021

Research Area Leader

**Applied Discrete Mathematics for Information Security.**

The Austrian Research Promotion Agency (FFG), Austria

*COMET K1 Program Line: Competence Centers for Excellent Technologies*

- ✧ Area Volume: 4,707,000 EUR (50% public funding)
- The research area is comprised of three COMET K1 Projects:
  - ✧ Consortium: 9 scientific and 25 industry partners
  - Combinatorics and Codes for Information Security (100% share of strategic research)
  - Future Cryptography: Foundations, New Threats and Novel Applications (70% share of strategic research)
  - Combinatorial Security Testing (70% share of strategic research)

**SENTINEL**

10.2018–09.2021

Co-PI

**Security Interaction Testing for IoT and Blockchains.**National Institute of Standards and Technology (NIST), US Department of Commerce, USA  
*Measurement Science and Engineering (MSE) Research Grant Programme*

- ✧ Project Volume: 585,000 USD (100% public funding)
- ✧ Consortium: University of Texas at Arlington and SBA Research

**SecWIT**

10.2017–09.2020

Project Leader

**Securing Web Technologies with Combinatorial Interaction Testing.**

The Austrian Research Promotion Agency (FFG), Austria

*BRIDGE Programme*

- ✧ Project Volume: 616,000 EUR (87.39% public funding)
- ✧ Consortium: SBA Research, Graz University of Technology and Nimbusec GmbH

**SPLIT**

02.2016–07.2018

Project Leader

**Securing Protocol Interaction Testing in Practice.**

The Austrian Research Promotion Agency (FFG), Austria

*BRIDGE Early Phase Programme*

- ✧ Project Volume: 610,000 EUR (91% public funding)
- ✧ Consortium: SBA Research, Graz University of Technology, University of Texas at Arlington and Objentis Software Integration GmbH

**MoBSeTIP**

05.2013–09.2014

Project Leader

**Model-based Security Testing in Practice.**

The Austrian Research Promotion Agency (FFG), Austria

*BRIDGE 1 Programme*

- ✧ Project Volume: 520,000 EUR (85% public funding)
- ✧ MoBSeTIP won the prestigious **EUREKA-innovation award 2015/16** through its participation to the ITEA2-funded action DIAMONDS
- ✧ Consortium: SBA Research, Graz University of Technology and Security Research GmbH

**CODECRYPT**

03.2012–02.2015

PI

**Application of Designs and Codes to Cryptography and IT Security.**

European Commission (EC) under an FP7 Action, EU

*ERCIM Career Development Grant*

- ✧ Project Volume: 75,000 EUR (100% public funding)
- ✧ Consortium: SBA Research

## Project Partner or Participant

<b>INTACT</b> 10.2024–09.2027 Main Staff Member	<b>Integrated Software Toolbox for Secure IoT-to-Cloud Computing.</b> Horizon Europe, EU <i>HORIZON Innovation Actions</i> ✧ Consortium Leader: Inlecom Commercial Pathways & Thales Six GTS France ✧ Project Share Volume: 323,000 EUR (100% public funding) ✧ Project Leader for SBA Research (until 06.2025)
<b>ArchitectECA2030</b> 05.2020–04.2023 Main Staff Member	<b>Trustable Architectures with Acceptable Residual Risk for the Electric, Connected and Automated Cars.</b> H2020, EU & The Austrian Research Promotion Agency (FFG), Austria <i>ECSEL Joint Undertaking (JU)</i> ✧ Consortium Leader: Infineon Technologies AG ✧ Project Share Volume: 218,750 EUR (70% public funding) ✧ Project Leader for SBA Research
<b>SBA2: Area 3</b> 05.2013–03.2017 Senior Researcher	<b>Secure Coding and Code Analysis.</b> The Austrian Research Promotion Agency (FFG), Austria <i>COMET K1 Program Line: Competence Centers for Excellent Technologies</i> ✧ Consortium Leader: SBA Research
<b>no. 03ED740</b> 09.2008–10.2018 Research Associate	<b>High Efficiency Cryptographic Systems and Data Coding for Applications of Secure Information Transmission.</b> General Secretariat of Research and Technology, Greece <i>PENED 2003</i> ✧ Consortium Leader: University of Athens

## Scientific and Technical Advisory

<b>ACOSec</b> 03.2024–02.2026 Technology Transfer Advisor & MARC PI	<b>Automatisierung von Security Tests mit kombinatorischen Methoden (Automation of Security Tests with Combinatorial Methods).</b> The Austrian Research Promotion Agency (FFG), Austria <i>Innovationscamps 2022</i> ✧ Project Volume: 199,427 EUR (98% public funding) ✧ Consortium: SBA Research, Commend International GmbH, fiskaly GmbH, mobimed Software GmbH, msg Plaut and and Objectis Software Integration GmbH ✧ Consortium Leader: SBA Research, MATRIS Applied Research Consulting (MARC)
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## Knowledge Transfer

<b>WrQuadrat</b> 07.2013 Cryptography Expert	<b>Innosheck WrQuadrat Project.</b> The Austrian Research Promotion Agency (FFG), Austria <i>Evaluation of cryptographic primitives for industrial applications</i> ✧ Project Revenue: 5,000 EUR ✧ Team Leader for SBA Research
<b>Kelisec</b> 03.2013–07.2013 Research Consultant	<b>Kelisec Patent Evaluation.</b> Kelisec AB, Sweden <i>Patent evaluation and proof-of-concept for usage in banking applications</i> ✧ Project Revenue: 60,000 EUR ✧ Team Leader for SBA Research

### Summary of Research Projects (PI or Project Leader only)

- Since 2012, I have led and managed individual and collaborative research projects of total volume about **12 million EUR** from which a sum of about **7.5 million EUR** has been publicly funded from various organizations (FFG, FP7, H2020, Horizon Europe, NIST).
- The table below gives a detailed overview of project-funded personnel costs of total volume about **3.5 million EUR** related only to my **host organization** (excluding travel and other overhead costs).

Project	Funding Agency	KR	SR	JR	Positions (FTE)	Funded Costs (EUR)
SBA-K1 4YE: Area 4	FFG	1	3	5	9 (8.8)	950,000
DYNAMO	NIST	1	1	1	3 (1.7)	188,000
SBA-K1: Area 4	FFG	1	3	2	6 (3.9)	600,000
SENTINEL	NIST	1	1	1	3 (1.7)	188,000
SecWIT	FFG	1	1	1	3 (1.9)	301,000
SPLIT	FFG	1	0	3	4 (3.4)	315,000
MoBSeTIP	FFG	1	0	3	4 (1.9)	250,000
CODECRYPT	ERCIM and EU FP7	0	1	0	1 (0.5)	75,000
ArchitectECA2030	H2020 ECSEL JU and FFG	1	1	1	3 (1.7)	153,000
INTACT	Horizon Europe	1	2	0	3 (1.2)	323,000
ACOSec	FFG	0	2	1	3 (1.5)	191,387
<b>Sum</b>		<b>9</b>	<b>15</b>	<b>18</b>	<b>42 (27.2)</b>	<b>3,534,387</b>

**Legend:** KR – Key Researcher, SR – Senior Researcher, JR – Junior Researcher. Values represent full-time equivalent (FTE) positions funded.

### Research Community Leadership and Academic Scholarly Service

#### Journal Editorships

- ✦ **Founding Editor and Lead Section Editor**, Springer Nature Computer Science (SNCS) Journal - Section on Combinatorial Methods and Models in System Testing (COMSYT), Springer Nature (2022 – present)
- ✦ *Editorial Board Member*, Mathematics in Computer Science (MCS), Springer (2018 – 2025)
- ✦ *Associate Editor*, Operational Research Forum (ORFO), Springer Nature (2019 – 2025)

#### Guest Editor for Journal Special Issues

1. Dimitris E. Simos, Cristina Seceleanu, Florian Lorber, Angelo Gargantini and Bernhard Garn (eds), **Springer Nature Computer Science**, Section on Combinatorial Methods and Models in System Testing, Special Issue on Advances in Combinatorial and Model-based Testing 2023, in progress.  
URL: [https://link.springer.com/journal/42979/topicalCollection/AC\\_26012bdc1b8706920d8a1cba0b5d6c3](https://link.springer.com/journal/42979/topicalCollection/AC_26012bdc1b8706920d8a1cba0b5d6c3)
2. Dimitris E. Simos, Franz Wotawa, Rick Kuhn, Angelo Gargantini, Ilias Kotsireas, Jeff Lei and Raghu Kacker (eds), **Springer Nature Computer Science**, Section on Combinatorial Methods and Models in System Testing, Topical Issue on Combinatorial Testing and its Applications, Continuous Article Publication (CAP), 2024.  
URL: [https://link.springer.com/journal/42979/topicalCollection/AC\\_164fbb930ed89c977c5f5a954078435d](https://link.springer.com/journal/42979/topicalCollection/AC_164fbb930ed89c977c5f5a954078435d)
3. Ilias S. Kotsireas, Dimitris E. Simos and Ali Kemal Uncu (eds), **Mathematics in Computer Science**, Volume 17 (Revised Selected Papers from ACA 2021), 2023.  
DOI: <https://doi.org/10.1007/s11786-023-00557-8>
4. Michela Ceria, Ilias S. Kotsireas, Teo Mora and Dimitris E. Simos (eds), **Applicable Algebra in Engineering, Communication and Computing**, Volume 33 (Revised Selected Papers from ACA 2021), 2022.  
DOI: <https://doi.org/10.1007/s00200-022-00587-y>
5. Ilias S. Kotsireas, Panos M. Pardalos and Dimitris E. Simos (eds), **Annals of Mathematics and Artificial Intelligence**, Volume 91 (Revised Selected Papers from LION 2021), 2023.  
DOI: <https://doi.org/10.1007/s10472-023-09838-1>
6. Lucia Moura and Dimitris E. Simos (eds), **Electronic Notes in Discrete Mathematics**, Volume 65 (Revised Selected Papers from CAI 2017), 2018.  
DOI: <https://doi.org/10.1016/j.endm.2018.02.012>

### Steering Committees

- ✧ *Steering Committee Member*, International Conference on Learning and Intelligent Optimization (LION, 2023 – present)
- ✧ **Steering Committee Chair**, International Workshop on Combinatorial Testing (IWCT, 2022 – present)
- ✧ **Steering Committee Chair**, International Conference on Mathematical Aspects of Computer and Information Sciences (MACIS, 2017 – 2019)

### Conference and Workshop Organization

1. *Program Co-Chair*, 19th International Conference on Availability, Reliability and Security (ARES 2024, Vienna, Austria)
2. *General Chair*, International Workshop on Dynamic of Disasters: Hybrid Threats (DOD 2024, Vienna, Austria)
3. *Technical Program Co-Chair*, 16th Learning and Intelligent Optimization Conference (LION 2022, Milos Island, Greece)
4. *Organizing Committee*, Symbolic Computation: Algorithms, Learning, and Engineering (SCALE 2022, Gebze, Turkey)
5. *Doctoral Symposium Co-Chair*, 15th International Symposium on Combinatorial Search (SOCS 2022, Vienna, Austria)
6. *Organizer*, Joint NIST/SBA Combinatorial Security Testing Workshop (CST 2022, Virtual, Online)
7. *Technical Program Chair*, 15th Learning and Intelligent Optimization Conference (LION 2021, Virtual, Online)
8. *Program Chair*, Applications of Computer Algebra (ACA 2021, Virtual, Online)
9. *General Chair*, International Workshop on Combinatorial Testing (IWCT 2021, Virtual, Online)
10. *General Chair*, International Workshop on Combinatorial Testing (IWCT 2020, Virtual, Online)
11. *Organizer*, Joint NIST/SBA Combinatorial Security Testing Workshop (CST 2019, Gaithersburg, USA)
12. *Program Co-Chair*, International Workshop on Combinatorial Testing (IWCT 2019, Xian, China)
13. *Program Co-Chair*, International Workshop on Combinatorial Testing (IWCT 2018, Vasteras, Sweden)
14. *General Chair*, 7th International Conference on Mathematical Aspects of Computer and Information Sciences (MACIS 2017, Vienna, Austria)
15. *Program Co-Chair*, International Workshop on Combinatorial Testing (IWCT 2017, Tokyo, Japan)
16. *Organizing Committee*, 7th International Conference on Algebraic Informatics (CAI 2017, Kalamata, Greece)
17. *Publicity Chair*, 4th International Conference on “Dependable Systems and Their Applications (DSA 2017, Beijing, China)
18. *Organizing Committee*, International Workshop on Combinatorial Testing (IWCT 2016, Chicago, USA)
19. *Local Organizing Chair*, 2016 IEEE International Conference on Software Quality, Reliability & Security (QRS 2016, Vienna, Austria)
20. *Organizer*, Joint NIST/SBA Combinatorial Security Testing Workshop (CST 2016, Vienna, Austria)
21. *PhD Symposium Co-Chair*, 20th ACM Symposium on Access Control Models and Technologies (SACMAT 2015, Vienna, Austria)
22. *Organizer*, Joint NIST/SBA Combinatorial Security Testing Workshop (CST 2015, Vienna, Austria)
23. *Co-Organizer*, Minisymposium on Metaheuristic Algorithms for Combinatorial Problems and Engineering Applications (OPTI 2014, Kos Island, Greece)
24. *Workshop Chair*, International Workshop on Modern Cryptography and Security Engineering (MoCrySEn 2013, Regensburg, Germany)
25. *Workshop Chair*, International Workshop on Modern Cryptography and Security Engineering (MoCrySEn 2012, Prague, Czech Republic)

### Research Networks and Affiliations

- ✧ *External Staff*, Research Unit of Security and Privacy, Institute of Logic and Computation (ILC), Technische Universität (TU) Wien, Austria (2023–present)
- ✧ *External Staff*, Research Unit of Data Science, Institute of Information Systems Engineering (ISE), Technische Universität (TU) Wien, Austria (2023–present)
- ✧ *Working Group Member*, The Applications of Computer Algebra Working Group (ACA-WG) (2021–present)



- ✧ *Core Team Member*, US NIST Working Group on “Automated Combinatorial Testing for Software (ACTS)” (2015–present)
- ✧ *Management Committee Substitute Member*, EU COST Action IC1403 on “Cryptanalysis of Ubiquitous Computing Systems (CRYPTACUS)” (2014–2018)
- ✧ *Software Module Testing Working Group Member*, US NIST Cryptographic Module Validation Programme (CMVP) (2016–2017)
- ✧ *Management Committee Member*, EU COST Action IC1104 on “Random Network Coding and Designs over  $GF(q)$ ” (2012–2016)
- ✧ *Expert Member*, ERCIM Expert Group on Security & Privacy (2014—2017)
- ✧ *Collaborator*, Computer Algebra Research Group (CARGO), Wilfrid Laurier University, Canada (2006–present)
- ✧ *Researcher*, Centre de calcul formel MEDICIS, École Polytechnique, France (2006–2011)
- ✧ *Researcher*, Shared Hierarchical Academic Research Computing Network (SHARCnet), Canada (2007–2011)

### Research Initiatives

- ✧ *Principal Investigator* for the Vienna CyberSecurity and Privacy (ViSP) Research Cluster, Vienna, Austria (2023–present)
- ✧ *Lead Principal Investigator* for the joint SBA Research and NIST Research Programme on **Applied Discrete Mathematics for Testing, Reliability and Information Security** (Co-PIs: Raghu Kacker (NIST), Rick Kuhn (NIST), Jeff Yu Lei (University of Texas at Arlington), 2020–2025)
- ✧ *Founding Member* for the **Dynamics of Disasters** Institute, Athens, Greece (2022)
- ✧ *Lead Principal Investigator* for the joint SBA Research and NIST Research Programme on **Combinatorial Security Testing** (Co-PIs: Raghu Kacker (NIST), Rick Kuhn (NIST), Jeff Yu Lei (University of Texas at Arlington), 2015–2020)

### Program Committees

- ✧ Learning and Intelligent Optimization Conference (LION 17, LION 18, LION 19)
- ✧ Annual IEEE Conference on Software Technology (STC 2020, STC 2022, STC 2023)
- ✧ World Congress on Global Optimization (WCGO 2021)
- ✧ 30th International Workshop on Combinatorial Algorithms (IWOCOA 2019)
- ✧ 8th International Conference on Algebraic Informatics (CAI 2019)
- ✧ International Conference on Dynamics of Disasters (DOD 2017, DOD 2019, DOD 2021)
- ✧ International Workshop on Trust, Security and Privacy for Big Data (BigTrust 2016, BigTrust 2017, BigTrust 2018)
- ✧ 9th International Conference on Security, Privacy and Anonymity in Computation, Communication and Storage (SpaCCS 2016)
- ✧ International Workshop on Trust, Security and Privacy for Big Data (TrustData 2016, TrustData 2017)
- ✧ International Conference on Testing Software and Systems (ICTSS 2016, ICTSS 2025)
- ✧ 8th International Conference on Advances in System Testing and Validation Lifecycle (VALID 2016)
- ✧ 20th European Symposium on Research in Computer Security (ESORICS 2015)
- ✧ International Workshop on Multimedia Forensics and Security (MFSec 2015)
- ✧ International Workshop on Combinatorial Testing (IWCT 2015)
- ✧ Annual International Conference on Cryptography and Information Security (BalkanCryptSec 2014, BalkanCryptSec 2015)
- ✧ International Workshop on Nature-Inspired Computing and Metaheuristics for Web Intelligence (NiCaM-WI 2012)
- ✧ International Conference on Availability, Reliability and Security (ARES 2012, ARES 2013, ARES 2014, ARES 2015, ARES 2016)
- ✧ International Workshop on Security of Mobile Applications (IWSMA 2012, IWSMA 2013, IWSMA 2014)
- ✧ International Workshop on Nature-Inspired Computing and Metaheuristics (NiCaM 2011)
- ✧ Scientific Symposium on Modern Problems of Applied Electromagnetism (MPAE 2011)



**University Committees**

- ✧ *Tenure and Promotion Committees Evaluator*, Department of Informatics & Telecommunications, University of Peloponnese, Greece (2017–2022)
- ✧ *Tenure and Promotion Committees Evaluator*, Department of Informatics & Telematics, Harokopio University of Athens, Greece (2017–2022)
- ✧ *External Examiner*, M.Sc. Thesis on “A Comparison of Combinatorial and Random Testing for Audio Processing Software” authored by Stephan Valentan and supervised via Prof. Franz Wotawa, Graz University of Technology, Institute for Software Technology, Austria (May 2021)

**External Grant Referee**

1. Swiss National Science Foundation (SNSF), Return CH Postdoc.Mobility (2025)
2. Swiss National Science Foundation (SNSF), R'Equip (2023)
3. Swiss National Science Foundation (SNSF), Div. Mathematics, Phys. and Engin. Sciences (2020)
4. Swiss National Science Foundation (SNSF), Div. Mathematics, Phys. and Engin. Sciences (2018)
5. Swiss National Science Foundation (SNSF), Div. Mathematics, Phys. and Engin. Sciences (2014)
6. German Research Foundation (DFG), Collaborative Research Centers Programme (2014)

**Journal Referee**

1. ACM Computing Surveys (CSUR)
2. ACM Digital Threats: Research and Practice (DTRAP)
3. ACM Transactions on Software Engineering and Methodology (TOSEM)
4. Advances in Software Engineering
5. Annals of Mathematics and Artificial Intelligence (AMAI)
6. Applicable Algebra in Engineering, Communication and Computing (AAECC)
7. Artificial Intelligence Review (AIRE)
8. Australasian Journal of Combinatorics (AJC)
9. Bulletin of the Belgian Mathematical Society
10. Computers & Security (COSE)
11. Cryptography and Communications
12. Designs, Codes and Cryptography (DCC)
13. Discrete Mathematics
14. Engineering Science and Technology, an International Journal
15. Expert Systems with Applications
16. Hacettepe Journal of Mathematics and Statistics
17. IEEE Access
18. IEEE IT Professional
19. IEEE Transactions on Industrial Informatics
20. IEEE Transactions on Information Forensics and Security
21. IEEE Transactions on Reliability (TREL)
22. IEEE Transactions on Software Engineering (TSE)
23. Information and Software Technology (INSOF)
24. Information Sciences
25. International Journal of Bio-Inspired Computation
26. International Journal of Combinatorics

27. International Journal of Computer Mathematics: Computer Systems Theory
28. International Journal of Cryptography and Information Security
29. Linear Algebra and its Applications (LAA)
30. Journal of Algebraic Combinatorics (JACO)
31. Journal of Applied Statistics
32. Journal of Applied Probability and Statistics
33. Journal of Circuits, Systems and Computers
34. Journal of Combinatorial Designs (JCD)
35. Journal of Computational Science
36. Journal of Internet Technology
37. Journal of Mathematical Cryptology
38. Journal of Network and Computer Applications
39. Journal of Statistics Applications & Probability
40. Journal of Supercomputing
41. Journal of Systems and Software (JSS)
42. Journal of Wireless Mobile Networks, Ubiquitous Computing, and Dependable Applications
43. Maple Transactions
44. Mathematics in Computer Science (MCS)
45. Neural Computing and Applications
46. Operations Research Forum (ORFO)
47. Optimization Letters (OPTL)
48. Optimization Methods and Software (OMS)
49. Recent Patents on Engineering
50. Software Testing, Verification and Reliability (STVR)
51. Theoretical Computer Science (TCS)

#### **Conference & Workshop Referee (without PC Memberships)**

- ✧ 32nd IFIP International Conference on ICT Systems Security and Privacy Protection (IFIPSec2017)
- ✧ 12th International Wireless Communications & Mobile Computing Conference (IWCMC2016)
- ✧ 30th IFIP International Conference on ICT Systems Security and Privacy Protection (IFIPSec2015)
- ✧ 3rd International Workshop on Security in Cloud Computing (AsiaCCS-SCC2015)
- ✧ 19th Annual International Conference on the Theory and Application of Cryptology and Information Security (ASIACRYPT 2013)
- ✧ 20th ACM Conference on Computer and Communications Security (CCS 2013)
- ✧ 11th International Conference on Finite Fields and their Applications (Fq11)
- ✧ 5th International Conference on Post-Quantum Cryptography (PQCrypto2013)
- ✧ 8th International Workshop on Coding Theory and Cryptography (WCC2013)
- ✧ 10th International Symposium on Experimental Algorithms (SEA11)

#### **Reviewer**

- ✧ AMS Mathematical Reviews (MR)
- ✧ Elsevier Insights e-book series (Elsevier)
- ✧ Zentralblatt MATH Reviews (ZB-MATH)

## Professional Societies

1. Association for Computing Machinery (ACM); Professional Member (2025–present)
2. ACM Special Interest Group on Software Engineering (SIGSOFT); Member (2025–present)
3. ACM Special Interest Group on Symbolic and Algebraic Manipulation (SIGSAM); Member (2025–present)
4. Austrian Computer Society (OCG); Member (2024–present)
5. European Alliance for Innovation (EAI); Member (2025–present)
6. European Geosciences Union (EGU); Regular Member (2025–present)
7. Institute of Combinatorics and its Applications (ICA); Associate Fellow (2010–2012), **Fellow** (2012–present)
8. Institute of Electrical and Electronics Engineers (IEEE); Graduate Student Member (2009–2011), Member (2011–2025), **Senior Member** (2025–present)
9. IEEE Communications Society (COMSOC); Graduate Student Member (2010–2011), Member (2011–2013)
10. IEEE Computer Society (COMPSOC); Member (2011–2025), Senior Member (2025–present)
11. IEEE Information Theory Society (ITSOC); Graduate Student Member (2009–2011), Member (2011–2015)
12. IEEE Reliability Society (RELSOC); Member (2015–2025), Senior Member (2025–present)
13. Machine Intelligence Research (MIR) Labs; Regular Member (2012–2025)
14. Hellenic Mathematical Society (HMS); Member (2006–2011)

## Research Community Leadership and Academic Scholarly Service Summary

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*Research community leadership achievements and academic scholarly accomplishments last updated on March 2025.*

## Research Visits and Stays Abroad

- **National Centre for Scientific Research “Demokritos” (NCSR-D)**, *Institute of Informatics & Telecommunications*, Athens, Greece, March 2025.  
(Contacts: Iraklis Klampanos and Antonis Troumpoukis)
- **SAS Institute**, *JMP Statistical Discovery*, Cary, USA, February 2025.  
(Contacts: Ryan Lekivetz, Joseph Morgan, Xan Gregg, Clay Barker, Laura Lancaster, Caleb King, Paul Nelson, Richard Zink, Bill Fisher, Yeng Saanchi, Irene Yi Ji and John Sall)
- **National Centre for Scientific Research “Demokritos” (NCSR-D)**, *Institute of Informatics & Telecommunications*, Athens, Greece, January 2024.  
(Contacts: Vangelis Karkaletsis and Iraklis Klampanos)
- **National Institute of Standards and Technology (NIST)**, *Information Technology Laboratory, Computer Security & Applied and Computational Mathematics Divisions*, Gaithersburg, USA, May 2019.  
(Contacts: Rick Kuhn, Raghu Kacker and Jeff Voas)
- **INRIA**, *Project-Team SECRET*, Paris, France, February 2019.  
(Contact: Nicolas Sendrier)

- **IBM Research, Haifa Research Lab**, Haifa, Israel, November 2017.  
(Contact: Rachel-Tzoref Brill)
- **University of Bergamo, Department of Management, Information and Production Engineering**, Bergamo, Italy, May–June 2017.  
(Contact: Angelo Gargantini)
- **Graz University of Technology, Institute for Software Technology**, Graz, Austria, March 2017.  
(Contact: Franz Wotawa)
- **Graz University of Technology, Institute for Software Technology**, Graz, Austria, June 2016.  
(Contact: Franz Wotawa)
- **Johannes Kepler University, Research Institute for Symbolic Computation**, Linz, Austria, February 2016.  
(Contact: Temur Kutsia)
- **National Institute of Standards and Technology (NIST), Information Technology Laboratory, Computer Security Division**, Gaithersburg, USA, November 2015.  
(Contact: Rick Kuhn)
- **University of Texas at Dallas, Department of Computer Science**, Dallas, USA, September 2015.  
(Contact: Eric Wong)
- **University of Texas at Arlington, Department of Computer Science and Engineering**, Arlington, USA, September 2015.  
(Contact: Jeff Yu Lei)
- **National Institute of Standards and Technology (NIST), Information Technology Laboratory, Mathematical and Computational Sciences Division**, Gaithersburg, USA, September 2015.  
(Contact: Raghu Kacker)
- **INRIA, Project-Team SECRET**, Paris, France, July 2015.  
(Contact: Nicolas Sendrier)
- **INRIA, Project-Team SECRET**, Paris, France, September 2014.  
(Contact: Nicolas Sendrier)
- **INRIA, Project-Team SECRET**, Paris, France, February 2014.  
(Contact: Nicolas Sendrier)
- **Graz University of Technology, Institute for Software Technology**, Graz, Austria, November 2013.  
(Contact: Franz Wotawa)
- **INRIA, Project-Team SECRET**, Paris, France, June–July 2013.  
(Contact: Nicolas Sendrier)
- **Graz University of Technology, Institute for Software Technology**, Graz, Austria, May 2013.  
(Contact: Franz Wotawa)
- **University of Rouen, LITIS Lab**, Rouen, France, February 2013.  
(Contact: Ayoub Otmani)
- **INRIA, Project-Team SECRET**, Paris, France, January 2012.  
(Contacts: Canteaut and Nicolas Sendrier)
- **SBA Research**, Vienna, Austria, November 2011.  
(Contacts: Peter Kieseberg and Edgar Weippl)
- **Johannes Kepler University, Research Institute for Symbolic Computation**, Linz, Austria, March 2011.  
(Contact: Veronika Pillwein, Temur Kutsia and Zafeirakis Zafeirakopoulos)
- **Veliko Tarnovo University, Department of Mathematics & Informatics**, Bulgaria, March 2011.  
(Contact: Zlatko Varbanov)
- **Johannes Kepler University, Research Institute for Symbolic Computation**, Linz, Austria, August 2010.  
(Contact: Veronika Pillwein and Zafeirakis Zafeirakopoulos)

## University Teaching Experience

### Teaching History

#### Senior Lectureships and University Professorships

07.2025–present: **Full Professor (Universitätsprofessor)**, Paris Lodron University of Salzburg, Department of Computer Science, Austria.

✧ VO 511.087: *Introduction to Cryptography and IT-Security*, 2 ECTS (2026S).

✧ PS 511.088: *Introduction to Cryptography and IT-Security*, 1 ECTS (2026S).

07.2025–present: **Senior Lecturer**, Salzburg University of Applied Sciences, Department of Information Technologies and Digitalisation, Austria.

✧ ITSB5KRYIL: *Cryptology*, 1 ECTS (2025W)

✧ WINB5ISEIL: *IT Security Engineering*, 3 ECTS (2025W)

#### Visiting Lectureships and Adjunct Professorships

03.2021–present: **Associate Professor (Privatdozent)**, Graz University of Technology, Faculty of Computer Science and Biomedical Engineering, Institute for Software Technology, Austria.

✧ VU 716.204: *Selected Topics of Software Technology: Quantum Computing*, 3 ECTS (2022S, 2023S, 2024S, 2025S).

✧ VO 716.201: *Selected Topics in Computer Science: Combinatorial Testing*, 2 ECTS (2022S).

✧ UE 716.202: *Selected Topics in Computer Science: Combinatorial Testing*, 1 ECTS (2022S).

03.2017–02.2021: **Visiting Lecturer**, Graz University of Technology, Faculty of Computer Science and Biomedical Engineering, Institute for Software Technology, Austria.

✧ VO 716.201: *Selected Topics in Computer Science: Combinatorial Testing*, 2 ECTS (2017S, 2018W, 2018S, 2021S).

✧ UE 716.202: *Selected Topics in Computer Science: Combinatorial Testing*, 1 ECTS (2017S, 2018W, 2018S, 2021S).

03.2014–09.2020: **Adjunct Lecturer (Universitätslektor)**, TU Wien, Faculty of Informatics, Institute of Information Systems Engineering, Austria.

✧ VU 188.959: *Software Security*, 3 ECTS (2014S, 2015S, 2016S, 2017S, 2018S, 2019S, 2020S).

✧ VU 188.916: *Introduction to Security*, 3 ECTS (2014W, 2015S, 2015W, 2016S, 2016W, 2017S).

Type	Course (held as Senior Lecturer and/or University Professor)	Level	University	Times (ECTS) Taught
VO	Introduction to Cryptography and IT Security (Lectures)	UG	PLUS	1 (2)
PS	Introduction to Cryptography and IT Security (Exercises)	UG	PLUS	1 (1)
IL	Cryptology (Lab Exercises)	UG	FH Salzburg	1 (1)
IL	IT Security Engineering (Lectures and Lab Exercises)	UG	FH Salzburg	1 (3)
Type	Course (held as Visiting Lecturer and/or Adjunct Professor)	Level	University	Times (ECTS) Taught
VU	Selected Topics of Software Technology: Quantum Computing (Lectures and Exercises)	PG	TU Graz	4 (12)
VO	Selected Topics in Computer Science: Combinatorial Testing (Lectures)	PG	TU Graz	5 (10)
UE	Selected Topics in Computer Science: Combinatorial Testing (Exercises)	PG	TU Graz	5 (5)
VU	Introduction to Security (Lectures and Exercises)	UG	TU Wien	6 (18)
VU	Software Security (Lectures and Exercises)	PG	TU Wien	7 (21)

**Legend:** UG – Undergraduate, PG – Postgraduate.

#### Teaching Assistantships and Lab Instructorships

10.2006–09.2011: **Teaching Assistant & Lab Instructor**, National Technical University of Athens, School of Applied Mathematics and Physics, Greece.

10.2004–05.2005: **Lab Assistant & Co-Instructor**, University of Athens, Department of Mathematics, PC Lab, Greece.

Software	Course (supported as Teaching Assistant and/or Lab Instructor)	Level	University	Times Taught
Mathematica, Matlab	Software for Mathematics and Physics (Lectures and Lab Tutorials)	UG	NTUA	7
Gap	Coding and Information Theory (Lectures and Lab Tutorials)	UG	NTUA	1
Matlab	Graphs and 0-1 Matrices (Lectures and Lab Exercises)	PG	NTUA	1
Statgraphics	Statistical Designs (Lectures and Lab Exercises)	PG	NTUA	3
Statgraphics	Designs and Linear Models (Lectures and Lab Tutorials)	UG	NTUA	3
Matlab	Computer Graphics (Lectures and Lab Tutorials)	UG	UOA	1
Maple	Introduction to Operational Research (Lab Tutorials)	eC	UOA	1
Maple	Computer Algebra in Scientific Computing (Lab Tutorials)	eC	UOA	1

**Legend:** UG – Undergraduate, PG – Postgraduate, eC – e-Class (online).

## Curriculum Development

- ✍ As sole lecturer, I have organized, designed from scratch the course curriculum and handled all aspects of a postgraduate course on quantum computing (*Selected Topics of Software Technology: Quantum Computing*, Graz University of Technology (2022S, 2023S, 2024S, 2025S)).
- ✍ As sole lecturer, I have organized, designed from scratch the course curriculum and handled all aspects of a postgraduate course on combinatorial testing (*Selected Topics in Computer Science: Combinatorial Testing*, Graz University of Technology (2017S, 2018W, 2018S, 2021S, 2022S)).
- ✍ As head lecturer, I have redesigned the course curriculum and coordinated exams together with exercises for undergraduate (*Introduction to Security*, TU Wien (2014W, 2015S, 2015W, 2016S, 2016W, 2017S)) and postgraduate courses on topics of information security (*Software Security*, TU Wien (2014S, 2015S, 2016S, 2017S, 2018S, 2019S, 2020S)).

## Student Supervision

- Since 2014, I have supervised or I am currently advising 8 Bachelor, 12 Master and 3 PhD students at Public Universities (TU Wien, Faculty of Informatics; TU Wien, Faculty of Mathematics and Geoinformation; University of Vienna, Faculty of Informatics) and Universities of Applied Sciences (FH Campus Wien, FH St. Pölten) on various topics of Discrete Mathematics and their applications to Computational Science (e.g. Computer Algebra, Symbolic Computation, Mathematical Modelling, Optimization and Disaster Management) and Computer Science (e.g. Software Engineering, Algorithms, Quantum Computing, Cryptography and Information Security).
- **Disclaimer:** As of 2021, I hold the *venia docendi* (teaching license) in Applied Computer Science, awarded as part of my habilitation. Since then, I have always acted as the main or sole supervisor of academic theses without requiring special permission from the respective Dean of Studies or Academic Affairs. In 2025, I was further granted the *Lehrbefugnis* (teaching authorization) for the subject of Cybersecurity, conferred as part of my appointment to a full professorship.

## Doctoral Student Supervisor

✧ TU Wien, Faculty of Informatics:

1. Manuel Leithner, *Advanced Combinatorial Testing for Software Engineering and Information Security*, Ph.D. Thesis, pending proficiency evaluation.
2. Ludwig Kampel, *Combinatorial Design Theory and Applications for Software Testing*, Ph.D. Thesis, October 2024.
3. Bernhard Garn, *Design Theory Methods and their Application to the Science of Security*, Ph.D. Thesis, October 2023.

## Postgraduate Scholar Supervisor

✧ TU Wien, Faculty of Informatics<sup>2</sup>:

1. Michael Wagner, *Efficient Constraint Validation using Formal Methods in Combinatorial Testing*, Diploma Thesis (equiv. to M.Sc.), in progress.
2. Jovan Zivanovic, *On the Applicability of Combinatorial Testing to the Optimization of Neural Network Architectures for detecting SQL Injections*, Diploma Thesis (equiv. to M.Sc.), in progress.
3. Dominik-Philipp Schreiber, *Security Testing for the Bluetooth Low Energy Protocol using Combinatorial Methods*, Diploma Thesis (equiv. to M.Sc.), in progress.
4. Irene Hiess, *Exact Methods for Covering Array Generation*, Diploma Thesis (equiv. to M.Sc.), March 2024.
5. Markus Fugger, *Input Models for Combinatorial Testing using Source Annotations*, Diploma Thesis (equiv. to M.Sc. co-advised with Edgar Weippl), October 2023.

<sup>2</sup>Special permission granted to act as the main diploma thesis supervisor (for Kristoffer Kleine) from the Dean of Academic Affairs, Assoc. Prof. Hilda Telliglu

6. Kristoffer Kleine, *Efficient Algorithms and Tools for Practical Combinatorial Testing*, Diploma Thesis (equiv. to M.Sc.), June 2018.
7. Martin Kirchner, *On the Applicability of Secret-sharing Cryptography in Secure Cloud Services*, Diploma Thesis (equiv. to M.Sc., co-advised with Edgar Weippl), March 2014.

✧ *TU Wien, Faculty of Mathematics and Geoinformation*<sup>3</sup>:

1. Bernhard Garn, *Algebraic Methods for Experimental Design Theory*, Diploma Thesis (equiv. to M.Sc.), March 2019.
2. Ludwig Kampel, *Combinatorial and Algorithmic Constructions of Covering Arrays*, Diploma Thesis (equiv. to M.Sc.), March 2018.

✧ *FH Campus Wien, University of Applied Sciences*<sup>4</sup>:

1. Stefan Zauner, *Browser Fingerprinting using TLS Sequences obtained via Combinatorial Methods*, M.Sc. in Engineering Thesis, October 2019.
2. Fabian Würfl, *Combinatorial Testing of the Linux Kernel with Applications to Computer Security*, M.Sc. in Engineering Thesis, February 2018.

✧ *FH St. Pölten, University of Applied Sciences*<sup>5</sup>:

1. Manuel Leithner, *Reverse Engineering for Input Modeling: Model Inference from Traffic Traces*, M.Sc. in Information Security Thesis, July 2022.

### Bachelor Thesis Advisor

✧ *TU Wien, Faculty of Informatics*:

1. Christoph Wech, *Automated Reverse Engineering of CAN Frames using Combinatorial Testing*, B.Sc. Thesis (co-advised with Edgar Weippl), September 2023.
2. Dominik-Philipp Schreiber, *XSS Vulnerability Testing for E-Mail Security using Combinatorial Methods*, B.Sc. Thesis, November 2020.
3. Daniel Lang, *Web Application Firewall Testing using Combinatorial Methods*, B.Sc. Thesis, November 2020.
4. Jovan Zivanovic, *Web Application Security Testing for SQL Injections using Combinatorial Methods*, B.Sc. Thesis, January 2019.
5. Kristoffer Kleine, *Combinatorial Methods for Testing Certificates*, B.Sc. Thesis (co-advised with Edgar Weippl), March 2016.

✧ *TU Wien, Faculty of Mathematics and Geoinformation*:

1. Peter Stadlmann, *Combinatorial Methods for Group Testing*, B.Sc. Thesis, in progress.

✧ *University of Vienna, Faculty of Informatics*:

1. Sebastian Georg Dumbs, *OCTOPUS: A Web-based Framework for Integration of several Combinatorial Security Testing Tools*, B.Sc. Thesis, June 2021.

✧ *FH St. Pölten, University of Applied Sciences*:

1. Manuel Leithner, *Covering Array Generation. Algorithms and Implementations*, B.Sc. in Engineering Thesis, August 2020.

### Undergraduate Research

✧ *SBA Research*:

- I have regularly mentored and advised research-focused internships with the goal to facilitate the trainee's first steps as junior researchers, where most of them have joined afterwards my research group.
- From 2014-2025, I have acted as a supervisor for 15 research interns (7 under the FemTech program for female researchers in mathematics and IT) where the technical results of the individual research collaborations led to the publication of 11 scientific papers.

### Invited Talks and Lectures

- Since 2011, I have given 41 invited talks and lectures (of which 19 were externally funded) at scientific conferences, public and private universities, research and governmental organizations on various topics of Discrete Mathematics and

<sup>3</sup>Special permission granted to act as the main diploma thesis supervisor from the Dean of Studies, Prof. Dr. Günther Karigl

<sup>4</sup>FH Campus Wien allows external Ph.D. holders to act as a master thesis supervisor

<sup>5</sup>FH St. Pölten allows external Ph.D. holders to act as a master thesis supervisor



their applications to Computational Science (e.g. Computer Algebra, Symbolic Computation, Mathematical Modelling, Optimization and Disaster Management) and Computer Science (e.g. Software Engineering, Algorithms, Quantum Computing, Cryptography and Information Security).

- In particular, I have given 12 invited conference talks, 16 invited university lectures and 13 invited science outreach talks in various events taking place in Austria, Greece, Israel, Bulgaria, Italy, France, Philippines, and USA.

#### Invited Conference Talks

1. **Plenary Talk (funded)** at the 5th Pythagorean Conference (PYTHAG), “Applications of Combinatorial Designs to Software Engineering, Cyber Security and Disaster Science”, June 6, 2025, Horizon Blu, Kalamata, Greece.
2. **Keynote Lecture (funded)** at the 35th International Conference on Principles of Diagnosis and Resilient Systems (DX), “Combinatorial Methods beyond Testing: Optimizing Disaster Scenarios to Strengthen Disaster Preparedness and Resilience”, November 5, 2024, Europahaus Wien, Vienna, Austria.
3. **Plenary Talk (funded)** at the UNCTAD-PH-US Workshop on harnessing science, technology and innovation (STI) for disaster risk reduction (DRR), “A Combinatorial STI Solution for a Disaster Management Framework towards Stakeholder Engagement”, February 29, 2024, Metro Manila, Philippines.
4. **Plenary Talk (funded)** at the 6th International Conference on Dynamics of Disasters (DOD), “Disaster scenarios with discrete sequences: Using combinatorics for enhanced disaster preparedness” (with B Garn and K Kieseberg), July 4, 2023, Laskaridis Foundation, Piraeus, Greece.
5. Conference Tutorial at the 16th Learning and Intelligent Optimization (LION) Conference, “Crops, Tuples and Disasters” (with B Garn and K Kieseberg), June 9, 2022, Milos Conference Center, Milos Island, Cyclades, Greece.
6. Conference Tutorial at Defense and Aerospace Test and Analysis (DATA) Workshop sponsored by NASA and IDA, “Combinatorial Methods for Testing and Analysis of Critical Software and Security Systems” (with R Kuhn and RN Kacker), April 11, 2019, Waterford at Springfield, Springfield, VA, USA.
7. Session Talk at International Symposium on Business and Industrial Statistics (ISBIS), “Combinatorial Testing Methods and Algorithms for Detecting Cryptographic Trojans”, July 4, 2018, University of Piraeus, Piraeus, Greece.
8. Conference Tutorial at Hot Topics in the Science of Security: Symposium and Bootcamp (HotSoS) sponsored by NSA, “Combinatorial Security Testing Course” (with R Kuhn), April 10, 2018, North Carolina State University Campus, Raleigh, NC, USA.
9. Conference Tutorial at the 13th Haifa Verification Conference, “Combinatorial Security Testing: Quo Vandis?”, November 13, 2017, IBM Research Haifa, Haifa, Israel.
10. Conference Tutorial at the 2016 IEEE International Conference of Software, Quality, Reliability & Security (QRS), “Combinatorial Security Testing” (with R Kuhn, Y Lei and RN Kacker), August 1, 2016, TU Wien, Vienna, Austria.
11. Session Talk (funded) at the 2014 Security Forum Hagenberg, “The Mathematics behind an Automated Penetration Testing Framework”, April 9, 2014, University of Applied Sciences Upper Austria, Hagenberg Campus, Austria.
12. **Plenary Talk (funded)** at the 2011 Scientific Symposium on Modern Problems of Applied Electromagnetism, “Encryption Schemes from Orthogonal Matrices and Related Cryptanalysis”, March 25, 2011, National Military University (NMU) “Vassil Levski”, Veliko Tarnovo, Bulgaria.

#### Invited University Lectures

1. **Professorial Hearing Expert Lecture** as part of the Hearing Procedure for the Joint Professorship Cyber Security at Salzburg University of Applied Sciences (FH Salzburg) and Paris Lodron University of Salzburg (PLUS), “Combinatorial Security Testing of Software and Systems”, November 12, 2024, Salzburg, Austria.
2. **Professorial Hearing Teaching Lecture** as part of the Hearing Procedure for the Joint Professorship Cyber Security at Salzburg University of Applied Sciences (FH Salzburg) and Paris Lodron University of Salzburg (PLUS), “Why is Textbook-RSA not IND-CPA-secure?”, November 12, 2024, Salzburg, Austria.
3. Seminar Lecture as part of the Lecture Series of the Research Institute for Supply Chain Management (RI SCM) at Vienna University of Economics and Business, “Combinatorial Methods for Testing and Analysis of Complex Systems”, October 24, 2024, Vienna, Austria.
4. **Habilitation Teaching Lecture** at Graz University of Technology, Institute for Applied Information Processing and Communications (IAIK), “Foundations of Artificial Intelligence: Constraint Satisfaction Problems”, September 29, 2020, Graz, Austria.

5. **Habilitation Colloquium Talk** at Graz University of Technology, Institute of Software Technology (IST), “Combinatorial Methods for Secure Software Quality Assurance”, June 20, 2017, Graz, Austria.
6. Colloquium Talk (funded) at University of Bergamo, Department of Management, Information and Production Engineering (DEGLI), “Combinatorial Methods and Algorithms in Security Testing”, June 1, 2017, Bergamo, Italy.
7. Seminar Lecture (funded) as part of the Software Testing and Verification Course at University of Bergamo, Department of Management, Information and Production Engineering (DEGLI), “Combinatorial Methods and Related Modelling Techniques in Testing”, May 31, 2017, Bergamo, Italy.
8. Colloquium Talk at TU Wien, Institute of Software Technology and Interactive Systems (ISIS), “Improving the Quality Assurance of Secure Software through Combinatorial Methods”, January 17, 2017, Vienna, Austria.
9. Colloquium Talk at Graz University of Technology, Institute of Software Technology (IST), “Combinatorial Methods for Quality Assurance of Secure Software: Recent Results and Challenges Ahead”, June 20, 2016, Graz, Austria.
10. Colloquium Talk at Johannes Kepler University, Research Institute for Symbolic Computation (RISC), “Information Security through Combinatorial Designs and Symbolic Computation: Recent Results and Challenges Ahead”, April 4, 2016, Hagenberg, Austria.
11. Guest Lecture (funded) as part of a Software Engineering Seminar at University of Texas at Arlington, Department of Computer Science and Engineering, “Algebraic Modelling of Covering Arrays”, September 24, 2015, Arlington, TX, USA.
12. Guest Lecture (funded) as part of a Cryptography Seminar at Graz University of Technology, Institute for Applied Information Processing and Communications (IAIK), “A Bird’s-Eye View of Code-based Cryptography”, September 18, 2013, Graz, Austria.
13. Seminar Lecture as part of the POLSYS Seminar at Université Pierre et Marie Curie 06 (UPMC), LIP6, “Symbolic Computation for Orthogonal Designs”, February 15, 2013, Paris, France.
14. Seminar Lecture (funded) as part of the Combinatorics and Algorithms Seminar at University of Rouen, LITIS, “On the Hardness of Code Equivalence over  $\mathbb{F}_q$ ”, February 14, 2013, Campus du Madrillet, Rouen, France.
15. Seminar Lecture as part of the Algorithmic Combinatorics Seminar at Johannes Kepler University, Research Institute for Symbolic Computation (RISC), “Efficient Algorithms for Compatible Sequences, Complexity Analysis and Related Problems”, March 30, 2011, Hagenberg, Austria.
16. Seminar Lecture (funded) as part of the Mathematical Foundations of Informatics Seminar at Veliko Tarnovo University (VTU) “St. Cyril and St. Methodius”, Department of Mathematics and Informatics, “Construction Methods of Optimal Codes from Combinatorial Designs”, March 24, 2011, Veliko Tarnovo, Bulgaria.

#### Invited Science Outreach Talks

1. Colloquium Lecture (funded) as part of the JMP R&D Colloquium Series at JMP Statistical Discovery, “Combinatorics beyond Experimental Design: Advancing Testing & Security of Critical Software, Medical Data Analysis and Resilience of Complex Systems”, February 11, 2025, Cary, NC, USA.
2. Guest Lecture (funded) as part of the TAROT 2024 Summer School on Software Testing, Verification & Validation at University of Bergamo, Department of Management, Information and Production Engineering (DEGLI), “Configuration Testing & Input Testing”, July 10, 2024, Bergamo, Italy.
3. Guest Lecture (funded) as part of the TAROT 2024 Summer School on Software Testing, Verification & Validation at University of Bergamo, Department of Management, Information and Production Engineering (DEGLI), “Combinatorial Methods in Testing and Selected Applications of Combinatorial Testing”, July 10, 2024, Bergamo, Italy.
4. Seminar Lecture as part of the ECE Seminar Series at the International Institute for Applied Systems Analysis (IIASA), “Using Combinatorial Scenarios to Advance Disaster Preparedness for Natural and Technological Hazards”, April 8, 2024, Laxenburg, Austria.
5. World Cafe Presentation (funded) at the UNCTAD-PH-US Workshop on harnessing science, technology and innovation (STI) for disaster risk reduction (DRR), “Using Combinatorial Scenarios to Advance Disaster Preparedness for Natural and Technological Hazards”, March 1, 2024, Metro Manila, Philippines.
6. Session Talk at the SummitUp Special, Key Researcher Talk Series hosted by SBA Research, “Combinatorial Testing Methods and Algorithms for Detecting and Locating Cryptographic Trojans”, May 31, 2021, Virtual, Online.
7. Session Talk at the European Research Consortium for Informatics & Mathematics (ERCIM) Fall 2015 Meeting, “Combinatorial Security Testing: Advancing Information Security through Combinatorial Testing”, October 12, 2015, SBA Research, Vienna, Austria.

8. Colloquium Talk (funded) at the Computer Science Colloquium in conjunction with the IEEE Reliability Society Fall 2015 Student Outreach, University of Texas at Dallas, Department of Computer Science, "Combinatorial Security Testing: Improving Information Security through Combinatorial Testing", September 25, 2015, Dallas, TX, USA.
9. Seminar Lecture (funded) as part of the Applied and Computational Mathematical Division Seminar Series at US National Institute of Standards and Technology (NIST), Information Technology Laboratory (ITL), "Combinatorial Security Testing: Combinatorial Testing meets Information Security", September 22, 2015, Gaithersburg, MD, USA.
10. Guest Lecture as part of a Cryptography Seminar at the Austrian Institute of Technology (AIT), Safety and Security Department, "An Overview of Code-based Cryptography", December 5, 2013, Vienna, Austria.
11. Colloquium Talk at the Colloquium "Cryptography and its Applications in the Armed Forces", Hellenic Military Academy (HMA) "Evelpidon", "Families of Block Ciphers from Combinatorial Designs", April 6, 2012, Vari, Greece.
12. Guest Lecture (funded) as part of an Information Security Seminar at SBA Research, "A Bird's-Eye View of Optimal Codes and Symmetric Cryptography from Combinatorial Designs", November 16, 2011, Vienna, Austria.
13. Colloquium Talk at the Colloquium "Applications of Mathematics and Informatics in Military Sciences", Hellenic Military Academy (HMA) "Evelpidon", "Private-key Cryptosystems from Combinatorial Designs", April 12, 2011, Vari, Greece.

## Collaborators and Other Affiliations

### Selected Collaborators and Co-Editors

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J Bloemer	Paderborn University, <i>Professor</i> , Germany.
H Schulmann	Goethe University Frankfurt, <i>Professor</i> , Germany.

### Postdoctoral Sponsors

N Sendrier	INRIA Paris-Rocquencourt, <i>Research Director</i> , France.
E Weippl	SBA Research, <i>Research Director</i> , Austria; University of Vienna, <i>Professor</i> , Austria.

### PhD Advisor

C Koukouvinos	National Technical University of Athens, <i>Professor</i> , Greece.
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## Publications

- Since 2006, I have (co)-authored 165 publications on various topics of Discrete Mathematics and their applications to Computer Science, e.g. Software Engineering, Algorithms, Quantum Computing, Cryptography and Information Security and recently to Computational Science, e.g. Computer Algebra, Symbolic Computation, Mathematical Modelling, Optimization and Disaster Management.
- In particular, I have authored 3 academic theses, (co)-edited 8 books and (co)-authored 6 book chapters, 57 journal papers, 66 conference and workshop papers, 23 papers in other conference proceedings and 2 technical reports or magazine articles.
- **Disclaimer:** For the following publication list up to 2015 an "alphabetical order" author policy has been used. From 2016 till today for publications within the field of Applied Computer Science a "first author" author policy has been enforced, while for publications in the area of the Mathematics and Theoretical Computer Science the "alphabetical order" author policy remains in effect.

## Academic Theses

1. Simos, DE (2020). "Combinatorial Methods and Algorithms for Secure Software Quality Assurance". Professorial Dissertation (Habilitation thesis). Graz University of Technology.
2. Simos, DE (2011). "Combinatorial Design Theory, Coding Theory and Cryptography". PhD thesis. National Technical University of Athens.
3. Simos, DE (2007). "Orthogonal Designs, Self-Dual Codes and their Applications to Cryptography". MA thesis. National Technical University of Athens.

## Edited Books

1. Simos, DE, PM Pardalos, IS Kotsireas, B Garn, and SW Pickl, eds. (2025). *DOD '24: Proceedings of the International Workshop on Dynamics of Disasters - Hybrid Threats, Springer Optimization and its Applications*, to appear. Switzerland: Springer Nature.
2. Simos, DE and H Shulman, eds. (2024). *ARES '24: Proceedings of the 19th International Conference on Availability, Reliability and Security*. New York, NY, USA: Association for Computing Machinery, 202 Articles.
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4. Garn, B, L Kampel, IS Kotsireas, M Wester, and DE Simos, eds. (2021). *Applications of Computer Algebra, 26th International Conference, ACA 2021, Book of Abstracts*. online, 257 pp.
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6. Blömer, J, IS Kotsireas, T Kutsia, and DE Simos, eds. (2017). *Mathematical Aspects of Computer and Information Sciences, 7th International Conference, MACIS 2017, Proceedings*. Vol. 10693. Lecture Notes in Computer Science. Berlin: Springer, 462 pp.
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6. Koukouvinos, C and DE Simos (2012). A Bird's Eye View of Modern Symmetric Cryptography from Combinatorial Designs. In: *AMIMS '11: Applications of Mathematics and Informatics in Military Science, Springer Optimization and its Applications*. Vol. 71, pp.189–219.

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2. Corpaci, L, M Wagner, S Raubitzek, L Kampel, K Mallinger, and DE Simos (2025). Estimating Combinatorial t-way Coverage based on Matrix Complexity Metrics. In: *ICTSS '24: Proceedings of the 36th International Conference on Testing Software and Systems, Lecture Notes in Computer Science*. Vol. 15383, pp.3–20, **Best Paper Award**.
3. Fugger, M, M Leithner, and DE Simos (2025). Annotation-based input modeling for combinatorial testing. In: *ICTSS '24: Proceedings of the 36th International Conference on Testing Software and Systems, Lecture Notes in Computer Science*. Vol. 15383, pp.332–348.
4. Kieseberg, K, K Gerner, B Garn, W Czerni, DE Simos, DR Kuhn, and R Kacker (2025). Combinatorial Methods for Enhancing the Resilience of Production Facilities. In: *IEEE International Conference on Software Testing, Verification and Validation, ICST 2025 - Workshops, Naples, Italy, March 31 - April 4, 2025*. IEEE, pp.310–313.
5. Leithner, M, J Zivanovic, R Kugler, and DE Simos (2025). Towards Continuous Integration for Combinatorial Testing. In: *IEEE International Conference on Software Testing, Verification and Validation, ICST 2025 - Workshops, Naples, Italy, March 31 - April 4, 2025*. IEEE, pp.288–291.
6. Schreiber, D, M Leithner, J Zivanovic, and DE Simos (2025). Bluetooth Low Energy Security Testing with Combinatorial Methods. In: *USENIX ATC '25: Proceedings of the 2025 USENIX Annual Technical Conference, Boston, MA, USA, July 7 - 9, 2025*. USENIX, pp.1625–1638.
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10. Feng, H, X Ren, Q Wei, Y Lei, R Kacker, DR Kuhn, and DE Simos (2023). MagicMirror: Towards High-Coverage Fuzzing of Smart Contracts. In: *IEEE Conference on Software Testing, Verification and Validation, ICST 2023, Dublin, Ireland, April 16-20, 2023*. IEEE, pp.141–152.
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Publications Summary and Citation Metrics

Publications Summary

Academic Theses	3
Edited Books	8
Book Chapters	6
Papers in Refereed Journals	57
Papers in Refereed Conferences and Workshops	66
Papers in Other Conference Proceedings	23
Magazine Articles and Technical Reports	2
Total Publications	165

Publications summary last updated on August 2025.

Citation Metrics

Citations (Google Scholar)	1408
h-index (Google Scholar)	21
i10-index (Google Scholar)	45
RI score	388.5
Erdős number	2

Citation metrics last updated on August 2025.

## Appendix

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