

Abhishek Bichhawat

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Gandhinagar, India
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Research Interests

Formal methods and verification for systems, Verification of protocols' security,
Web security, Usable security and privacy

Professional Appointments

- Mar. 2021 – **Assistant Professor**, IIT GANDHINAGAR, Gandhinagar, India.
Present Discipline of Computer Science and Engineering
- Jan. 2018 – **Postdoctoral Fellow**, CARNEGIE MELLON UNIVERSITY, Pittsburgh, USA.
Mar. 2021 School of Computer Science and Cylab
- Aug. 2011 – **Member of Technical Staff**, ORACLE INDIA PVT. LTD., Bangalore, India.
Nov. 2012 ASM Team – Database Test Development
- Apr. 2011 – **Visiting Scholar**, MACQUARIE UNIVERSITY, Sydney, Australia.
Jun. 2011

Education

- 2013–2018 **Ph.D. Computer Science**, *Universität des Saarlandes and IMPRS-CS*, Germany.
Thesis: Practical Dynamic Information Flow Control.
Advisors: Christian Hammer & Deepak Garg
- 2009–2011 **M.Tech. Computer Science and Engineering**, *IIT Roorkee*, India.
First Class with Distinction - CGPA – 9.61
- 2005–2009 **B.E. Computer Science and Engineering**, *Anna University, Chennai*, India.
First Class with Distinction - CGPA – 8.5

Publications

- CCS 2023 Tainted Secure Multi-Execution to Restrict Attacker Influence
McKenna McCall, Abhishek Bichhawat and Limin Jia
30th ACM Conference on Computer and Communications Security, 2023
- SOUPS 2023 Towards Usable Security Analysis Tools for Trigger-Action Programming
McKenna McCall and Eric Zeng, Faysal Hossain Shezan, Mitchell Yang Lujo Bauer, Abhishek Bichhawat, Camille Cobb, Limin Jia and Yuan Tian
19th Symposium on Usable Privacy and Security, 2023
- EuroSP 2022 Compositional Information Flow Monitoring for Reactive Programs
McKenna McCall, Abhishek Bichhawat and Limin Jia
7th IEEE European Symposium on Security and Privacy, 2022
- Oakland 2022 Noise*: A Library of Verified High-Performance Secure Channel Protocol Implementations
Son Ho, Jonathan Protzenko, Abhishek Bichhawat and Karthikeyan Bhargavan
43rd IEEE Symposium on Security and Privacy, 2022
- PSL 2022 A Tutorial-Style Introduction to DY*
Karthikeyan Bhargavan, Abhishek Bichhawat, Quoc Huy Do, Pedram Hosseini, Ralf Küsters, Guido Schmitz and Tim Würtele
Protocols, Strands, and Logic, Essays Dedicated to Joshua Guttman on the Occasion of his 66.66th Birthday, 2022

- CCS 2021 An In-Depth Symbolic Security Analysis of ACME
Karthikeyan Bhargavan, Abhishek Bichhawat, Quoc Huy Do, Pedram Hosseini, Ralf Küsters, Guido Schmitz and Tim Würtele
ACM Conference on Computer and Communications Security, 2021
- JCS 2021 Permissive Runtime Information Flow Control in the Presence of Exceptions
Abhishek Bichhawat, Vineet Rajani, Deepak Garg and Christian Hammer
Journal of Computer Security, vol. 29, no. 4, 2021
- EuroSP 2021 DY*: A Modular Symbolic Verification Framework for Executable Cryptographic Protocol Code
Karthikeyan Bhargavan, Abhishek Bichhawat, Quoc Huy Do, Pedram Hosseini, Ralf Küsters, Guido Schmitz and Tim Würtele
6th IEEE European Symposium on Security and Privacy, 2021
- CSF 2021 Gradual Security Types and Gradual Guarantees
Abhishek Bichhawat, McKenna McCall and Limin Jia
34th IEEE Computer Security Foundations Symposium, 2021
- CSF 2021 Automating Audit with Policy Inference
Abhishek Bichhawat, Matt Fredrikson and Jean Yang
34th IEEE Computer Security Foundations Symposium, 2021
- AsiaCCS 2020 Contextual and Granular Policy Enforcement in Database-backed Applications
Abhishek Bichhawat, Matt Fredrikson, Jean Yang and Akash Trehan
15th ACM Conference on Computer and Communications Security, 2020
- ESORICS 2017 WebPol: Fine-grained Information Flow Policies for Web Browsers
Abhishek Bichhawat, Vineet Rajani, Jinank Jain, Deepak Garg and Christian Hammer
22nd European Symposium on Research in Computer Security, 2017
- CSF 2015 Information Flow Control for Event Handling and the DOM in Web Browsers
Vineet Rajani, Abhishek Bichhawat, Deepak Garg and Christian Hammer
28th IEEE Computer Security Foundations Symposium, 2015
- ICSE 2015 Post-dominator analysis for precisely handling implicit flows
Companion Abhishek Bichhawat
37th IEEE International Conference on Software Engineering 2, 2015
- PLAS 2014 Generalizing Permissive-Upgrade in Dynamic Information Flow Analysis
Abhishek Bichhawat, Vineet Rajani, Deepak Garg and Christian Hammer
ACM 9th Workshop on Programming Languages and Analysis for Security, 2014
- POST@ETAPS 2014 Information Flow Control in WebKit's JavaScript Bytecode
Abhishek Bichhawat, Vineet Rajani, Deepak Garg and Christian Hammer
3rd International Conference on Principles of Security and Trust, 2014
- ICSE 2014 Exception handling for dynamic information flow control
Companion Abhishek Bichhawat
36th IEEE International Conference on Software Engineering Companion Proceedings, 2014
- ICA3PP 2011 Security Architecture for Virtual Machines
Udaya Tupakula, Vijay Varadharajan and Abhishek Bichhawat
11th International Conference on Algorithms and Architectures for Parallel Processing, 2011
- ICACC 2011 Proactive Fault Tolerance Technique for a Mobile Grid Environment
Abhishek Bichhawat, Ramesh C. Joshi
International Conference on Advances in Computing and Communication, 2011
- IJRTET 2010 A survey on issues in mobile grid computing
Abhishek Bichhawat, Ramesh C. Joshi
International Journal of Recent Trends in Engineering and Technology, 2010

Grants and Funded Projects

- 2023-2026 Verified Security Properties of Group Messaging Protocols
PI, Funded by CEFIPRA under DST-Inria grant
INR 36,13,292 (Indian-side budget)
- 2021-2026 Practical Dynamic Information Flow Control
PI, Funded by DST as part of INSPIRE Faculty Award
INR 35,00,000

Service

Program Committee Member

IEEE COMPUTER SECURITY FOUNDATIONS SYMPOSIUM (CSF) – 2022 - 24
INTERNATIONAL CONFERENCE ON COMPUTER AIDED VERIFICATION (CAV) – 2023
IEEE EUROPEAN SYMPOSIUM ON SECURITY AND PRIVACY (EUROS&P) – 2023
INTERNATIONAL CONFERENCE ON INFORMATION AND SYSTEMS SECURITY (ICISS) – 2023
ACM WORKSHOP ON PRINCIPLES OF SECURE COMPILATION (PRISC) – 2023

Journal Reviewer

JOURNAL OF COMPUTER SECURITY (JCS)
ACM TRANSACTIONS ON PRIVACY AND SECURITY (TOPS)
JOURNAL OF COMPUTER AND SYSTEM SCIENCES
JOURNAL OF OBJECT TECHNOLOGY

Artifact Evaluation Committee Member

30TH USENIX SECURITY SYMPOSIUM, 2021
41ST ACM PLDI, 2020

Shadow PC and Poster Committee Member

41ST IEEE SYMPOSIUM ON SECURITY AND PRIVACY, 2020

Honors and Awards

- 2022 Google exploreCSR Award
- 2021 DST-Inspire Faculty Fellowship
- 2015 RS3 Best Paper Award for the paper “Information Flow Control for Event Handling and the DOM in Web Browsers”
- 2014 Second prize at the ACM SIGSOFT Student Research Competition at ICSE 2014
- 2011 Goyal Cash Prize for highest CGPA in CS from IIT Roorkee
- 2009 – 2011 MHRD Fellowship
- 2009 Best Performer in Training during internship at Infosys Technologies Ltd.