

Abhilash Gupta

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Security enthusiast, interested particularly in Fuzzing, Web Security, Usable Security and Privacy.

EDUCATION

UNIVERSITÄT DES SAARLANDES

M.Sc. IN COMPUTER SCIENCE

Oct'18-Feb'22 | Saarbrücken, Germany

CPI 1.4/4.0 (Best=1.0)

IIT BOMBAY

B.TECH IN COMPUTER SCIENCE

Jul'11-May'15 | Mumbai, India

CPI 7.50/10.0 (Best=10.0)

SKILLS

PROGRAMMING

Python • C • C++ • Java • Bash • R •
LLVM IR • HTML/CSS • Javascript •
Assembly

OTHERS

MySQL • PostgreSQL • Django • gRPC •
Protobuf • LXD • Docker • \LaTeX • BDD •
TDD

COURSEWORK

- Secure Web Development
- Web Security
- Generating Software Tests (*Research Asst*)
- Usable Security (*Research & Teaching Asst*)
- Security
- Operating Systems
- Distributed Systems
- Computer Architecture
- Database and Information Systems
- Computer Networks (*Teaching Asst*)
- Artificial Intelligence
- Data Structures and Algorithms
- Discrete Structures
- Software Systems

EXTRACURRICULARS

LANGUAGES

Assamese • English (C2) • German (B1) •
French (A1) • Hindi/Urdu • Bengali

SPORTS

Volleyball • Table Tennis • Cricket

HOBBIES & INTERESTS

Hiking • Comics • Penpalling • Learning
languages • Philately • History

LINKS

Webpage:// [abhilashgupta](#)
Github:// [abhilashgupta](#)
LinkedIn:// [guptaabhilash](#)

EXPERIENCE

CISPA | STUDENT RESEARCHER | Sep'19 – Present | Saarbrücken, Germany

- Developed a C++ tool to mutate benign C code into vulnerable LLVM IR code
- Developed a Python client API support tool for the Debug Adapter Protocol
- Implemented the LLVM IR version of the F1 fuzzer
- Studied car drivers' information demand on safety and security critical incidents [1]
- Studied people's privacy perceptions on shared device usage

JUNIPER NETWORKS | SE III | Aug'15 – Aug'18 | Bengaluru, India

- Led the Packet Forwarding Engine Unit testing Framework project
- Designed a Docker solution to test devices on any machine by leveraging RPCs
- Reduced the PFE Unit testing time by over 70%
- Worked on features such as IRB, BFD and private VLANs on the EX series switches

SAMSUNG R&D CENTER | INTERN | Summer'14 | Bengaluru, India

- Worked on porting LTE simulator hardware dependencies to Intel DPDK
- Achieved successful call setup between the simulator and a target machine

WEGILANT NET SOLUTIONS | INTERN | Summer'13 | Mumbai, India

- Developed a Java based admin page scanner and phishing page generator
- Wrote a white paper for the company describing fuzzing practices at Mozilla

KEY PROJECTS

Option fuzzing coreutils binaries

Fuzzed coreutils tools by automatically
extracting their configuration options

Yet-Another File System

Implemented a multi-server FS with file
sharing, caching lock servers and Paxos

Secure E-Commerce Application

Developed a secure webapp capable of SSO,
account management and online marketplace

Online Fashion Advisor

Developed webapp to advice clothes
based on user's physique e.g., height

Student Activity Management System

Designed relational models with 70+ relations
and developed in JSP; PostgreSQL backend

Freshmen Orientation App

Created hi-fi prototype app in
Axure RP via user-centred design

THESIS

Grammar Fuzzing Command line utilities in Linux

Grammar fuzzed 44 CLI utilities in Linux and discovered failures in 11 utilities

Oct'21 - Present

Browser Defenses against XSS Attacks [2]

Developed a Firefox browser extension that mitigates XSS and clickjacking attacks

Jan'15 - May'15

PUBLICATIONS

[1] Investigating Car Drivers' Information Demand after Safety and Security
Critical Incidents at CHI Conf. on Human Factors in Computing Systems, 2021

[2] Two for the price of one: A combined browser defense against XSS and
clickjacking at Intl. Conf. on Computing, Networking and Communications, 2016

OTHER ACTIVITIES

- 2020 Awarded the Saarland Stipendium Scholarship
- 2017-2019 Open-source contributions to **Duckduckgo** and **FuzzingBook**
- 2014 Semi-finalist at Code-Unicode, a secure programming competition
- 2014-2015 Led the CSE Department Academic Mentorship Program at IITB
- 2013 Qualified for ACM-ICPC Asia Amritapuri onsite regional rounds
- 2013 Awarded special mention for Fashion Advisor App at Yahoo HackU
- 2011 Indian National Mathematics Olympiad (INMO) Finalist
- 2011-2013 Represented IIT Bombay in Kho-kho, an outdoor Indian sport
- 2007-2015 Awarded the National Talent Search Examination scholarship