

Sanket Goutam

PH.D. CANDIDATE · STONY BROOK UNIVERSITY

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Research Experience

Samsung Research America

MENTORS: DR. MICHAEL GRACE, DR. HAYAWARDH VIJAYAKUMAR

- Security Researcher – Intern
- My research focuses on designing a privacy framework for the Android API subsystem

Mountain View, CA

May 2023 - Present

Ethos Lab, Stony Brook University

ADVISOR: DR. AMIR RAHMATI

- Research Assistant
- My (anticipated) Ph.D. thesis: “Privacy-centric Infrastructures for Pervasive Computing Ecosystems”

Stony Brook, NY

Aug. 2021 - Present

WSPR Lab, North Carolina State University

CO-ADVISORS: DR. WILLIAM ENCK, DR. BRAD REAVES

- Graduate Student Researcher
- Master Thesis: “Simple Least Privilege Network Policies for Smart Homes”

Raleigh, NC

2017 - '19

Education

Stony Brook University

PH.D., COMPUTER SCIENCE

GPA: 3.93/4.0

Stony Brook, New York

2021 - present

North Carolina State University

M.S., COMPUTER SCIENCE

GPA: 3.875/4.0

Raleigh, NC

2019

VIT University

B.TECH, COMPUTER SCIENCE & ENGINEERING

GPA: 8.84/10.0

Tamil Nadu, India

2017

Industry Experience

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| 2023-now | Samsung Research America , Research Intern, KNOX Security | California |
| 2019-2021 | HPE Aruba Networking , Software Engineer-II, OS Infrastructure | California |
| 2018 | HPE Aruba Networking , Software Engineering Intern, OS Infrastructure | California |
| 2017 | GE Digital , Software Engineering Intern, AppOps | Bangalore |

Selected Publications

* = Equal Contribution

PEER-REVIEWED CONFERENCE PUBLICATIONS

- C3 **Sanket Goutam** and Amir Rahmati, “Identity Management Framework for IoT Ecosystems”(Anonymized Title), in *Under Submission*, 2023.
- C2 **Sanket Goutam***, Yoonsang Kim*, Amir Rahmati, and Arie Kaufman, “Erebus: Access Control for Augmented Reality Systems”, in *Proceedings of the USENIX Security Symposium (USENIX Security’23)*, August 2023.
- C1 **Sanket Goutam**, William Enck, and Bradley Reaves, “Hestia — Simple Least Privilege Network Policies for Smart Homes”, in *Proceedings of the ACM Conference on Security and Privacy in Wireless and Mobile Networks (WiSec’19)*, May 2019. (Short Paper).

BOOK CHAPTERS

- B1 Kiruthika Devi B.S., **Sanket Goutam**, Anisha Jain, and Sai Pranav R, “Enhancing Web Security using Learning Algorithms for Anomaly Detection”, in the *Handbook of Cloud Security Parameters: Real-Time Measurements*, Shanlax Publications, 2016.

PRESENTATIONS

- P4 “Privacy-preserving API Frameworks for Samsung Knox SDK”, *Samsung Research America*, California, 2023.
P3 “Erebus: Access Control for Augmented Reality Systems”, *32nd USENIX Security Symposium (USENIX Security’23)*, Anaheim, California, 2023.
P2 “Designing an Access Control Framework for AR/VR systems”, *Graduate Research Day (GRD)*, Stony Brook University, New York, 2022.
P1 “Hestia: Simple Least Privilege Network Policies for Smart Homes”, *12th ACM Conference on Security and Privacy in Wireless and Mobile Networks (WiSec’19)*, Miami, Florida, 2019.

PATENTS

- Pa1 Enforcing Least Privilege Network Policies for Smart Homes, *NCSU Invention #19262*, 2019

Fellowships & Awards

FELLOWSHIPS

- 2021 -'24 **Excellence Fellowship**, Stony Brook University
2022 -'24 **Inclusive Computing Fellowship**, Dept. of Computer Science, Stony Brook University

CONFERENCE GRANTS

- 2024 **Student Support Grant**, NDSS Symposium
2023 **Student Grant**, USENIX Security Symposium
2023 **Student Travel Grant**, IEEE Security & Privacy Symposium (S&P)
2021 **NSF Student Conference Award**, ACM CCS
2019 **Student Travel Grant**, ACM WiSec

HONORS

- 2020, '21 **Recognition Awards for contributions to high-impact projects**, HPE Aruba Networking
2015 **Regional Qualifiers**, ACM International Collegiate Programming Contest (ACM ICPC)

Professional Activities

ARTIFACT EVALUATION COMMITTEE

- 2024 **ISOC Network and Distributed Systems Symposium (NDSS)**, Reviewer
2023-24 **USENIX Security Symposium (USENIX Security)**, Reviewer
2023 **ACM Conference on Computer and Communications Security (ACM CCS)**, Reviewer

PEER REVIEWS

- 2023 **IEEE Transactions on Dependable and Secure Computing (TDSC)**, Sub-Reviewer
2022 **USENIX Security Symposium (USENIX Security)**, Sub-Reviewer
2018 **ISOC Network and Distributed Systems Symposium (NDSS)**, Sub-Reviewer

SERVICE AND OUTREACH

- 2023 **IEEE Security & Privacy Symposium**, Student Volunteer *California*
2022-24 **Pedagogy and Inclusivity Training for Computer Science TAs**, CIC Fellow *SBU*
2022-24 **WAC Lighting Foundation Invitational Science Fair**, Judge *New York*
2022 **CSIRE (Computer Science and Informatics Summer Research Experience Program)**, Reviewer *SBU*

INVITED TALKS

- 2018 **Silicon Valley Outreach Program for K-12 Students**, Speaker *California*
2018 **Students in Programming, Robotics and Computer Science (SPARCS)**, Mentor *NCSU*

TEACHING EXPERIENCE

2022	CSE508-Network Security , Teaching Assistant	<i>SBU</i>
2021	CSE331-Computer Security Fundamentals , Teaching Assistant	<i>SBU</i>
2019	CSC591-Privacy , Teaching Assistant	<i>NCSU</i>
2019	CSC591-Cellular Network Security , Teaching Assistant	<i>NCSU</i>
2018	CSC415-Software Security , Teaching Assistant	<i>NCSU</i>

Selected Projects

Access Control Mechanism for Augmented Reality Devices : This is a research project where I developed a Domain-specific Language (DSL) to enforce access control policies for AR devices. It uses a NLP engine (using spaCy), a language transpiler (using ANTLR in C#), and policy enforcement in the Android subsystem.

Public Key Infrastructure(PKI) for IoT Devices : An ongoing research project where I am developing a PKI for IoT devices. The goal is to develop a framework for certificate enrollment specifically for resource-constrained off-the-shelf embedded devices.

DiemBFT State Machine Replication : I implemented parts of the DiemBFT consensus algorithm to develop a distributed log replication system in Python. This was undertaken as a course project.

Distributed Data Store and Shared Memory Infrastructure for ArubaOS : One of the core projects I was involved in at Aruba Networks, where I helped redesign a distributed data sharing service to support a 10x scale increase for the Aruba 9240 controller. I developed some of the core infrastructure services, Linux IPC services, and memory allocation to solve the scalability challenges of a large distributed network.

Message streaming service for Aruba controllers using gRPC : For my internship project, I developed a device-to-cloud message streaming application using gRPC in C++ with cross-compilation support to run it on the C-based ArubaOS.

Relevant Skills

Programming : Python, C/C++, C#, R, Matlab

Utilities : Docker, certbot, ANTLR, spaCy, ptrace, gdb, Git, \LaTeX , OpenFlow, Ryu, Wireshark, protobuf, gRPC

Systems : Linux, OpenWRT, Raspberry Pi, Windows