GAGAN CHANDAN

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RESEARCH INTERESTS

**Program Analysis, Functional Programming,
Automated Theorem Proving, Formal Methods, Type Theory**

EDUCATION

B.Tech in Computer Science and Engineering — November 2022 – Present
PES University — Bengaluru, India

EXPERIENCE

Research Intern — June 2025 - July 2025
Aarhus University — Aarhus, Denmark
- Working on the Flix programming language under Professor Magnus Madsen

Research Intern — June 2024 - July 2024
Indian Institute of Science — Bengaluru, India
- Worked on static analysis of Java programs under Professor K.V. Raghavan at the Programming Languages Lab

Student Head — Feb 2023 - May 2024
Centre for Information Security, Forensics and Cyber Resilience, PES University — Bengaluru, India
- Participated in multiple national and international Capture The Flag (CTF) competitions, focusing on Reverse Engineering and Binary Exploitation
- Taught workshops on Reverse Engineering, Cryptography and Steganography for undergaduate students of all semesters
- Assisted in teaching and lab setup for Cybersecurity courses offered to final year undergraduates and M.Tech students
- Conducted hackathons and CTF competitions for over 300 students

PROJECTS

pocket
A compiler for a procedural, statically typed programming language written in OCaml
https://github.com/gaganchandan/pocket

java-static-analyses
A collection of static analyses for Java programs
https://github.com/gaganchandan/java-static-analyses

solveit
A simple SAT solver for propositional logic written in Haskell
https://github.com/gaganchandan/solveit

goto-lang
An interpreter for a minimalistic programming language written in OCaml
https://github.com/gaganchandan/goto-lang

Talks and Workshops

Introduction to Reverse Engineering   October 2023
PES University   Bengaluru, India
- Talk followed by hands on session for over 200 undergraduates
- Slides: *https://gaganchandan.com/talks/revpesu2023*

Introduction to Cryptography and Steganography   April 2023
PES University   Bengaluru, India
- Interactive Workshop for over 100 undergraduates
- Slides: *https://gaganchandan.com/talks/cryptopesu2023*

Technical Abilities

Programming Languages:
Proficient in: Ocaml, Haskell, Rocq, Scala, Java, Python, C
Familiar with: x86 assembly, C++, Lua, JavaScript, Rust

Tools and Technologies:
Ghidra, AFL++, Z3, LLVM, GDB,
Linux, Git, Docker, LaTeX

Other Skills:
Compiler Design, Reverse Engineering,
Fuzzing, Penetration Testing

Accomplishments

Capture The Flag
ctftime.org
- 2022 - Annual ranking of 8th out of 4392 nationally and 190th out of 38050 globally with team ISFCR PESU (https://ctftime.org/team/166645)
- 2021 - Annual ranking of 15th out of 4392 nationally and 203rd out of 36811 globally with team Ashes (https://ctftime.org/team/155001)

Additional Skills

Languages:
English (Fluent)
Kannada (Native language; Fluent)
Hindi (Working knowledge)

Other Interests

Football, Distance Running, Swimming, Chess, Basketball