

CHINMAY DIWAKAR DESHPANDE

CONTACT INFORMATION

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INTERESTS

My primary area of interest is **Computer Security**. I like to work on low-level stuff related to **reverse engineering and software exploitation**. I am passionate about **binary analysis** using formal program analysis techniques such as symbolic execution. I am also interested in the **Windows** operating system internals.

EDUCATION

National Institute of Technology Karnataka, Surathkal 2013 - 2017
Bachelor of Technology in Information Technology GPA: 8.87/10

EXPERIENCE/PROJECTS

McAfee Software Development Engineer
Advanced Threat Defense (Windows Sandbox) June 2017 - Present

- Conduct low-level research on binary sandboxing (user-mode hooking, process memory analysis, evasion techniques, etc.) and reverse engineering of malware as a member of the Detection Research Team.
- Designed and implemented *DOPE - Detection over Partial Evaluation*, a JavaScript deobfuscation engine to improve detection of script-based malware found embedded across environments such as WScript and PDFs.
- Implemented a Prefilter module for PDF files for improving product performance. Research involved understanding the PDF file format structure and enumerating its attack surface (exploits, autoactions, etc.)

Rune - Symbolic Execution Engine Contributor / Maintainer
Radare December 2016 - Present

- Refactored existing code to implement an Explorer module to allow pre-defined choices at program points of the SSA-based intermediate representation (radeco-IR). Designed a new memory-module backend to support single-byte symbolic memory accesses.
 - Developed arch-rs, a library for providing low-level architecture information through a rich set of APIs.
 - Currently working on implementing semantics for a new Engine module operating over radeco-IR, designing multi-threaded path exploration and improving overall test infrastructure of the radare2-rust ecosystem.
 - Mentor for radeco, a radare2-based decompiler project for Google Summer of Code 2018. The project involved implementing control-flow restructuring and radeco-IR to AST conversion for pseudocode generation.
- Links:** <https://github.com/radareorg/rune> ; <https://github.com/radareorg/radeco-lib>

SKILLS

- **Languages** C/C++, Rust, Python, JavaScript, Clojure
- **Software** IDA, radare2, gdb, OllyDbg, z3, Yara, WinDbg