David M. Perry

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EDUCATION

Purdue University
M.S. in Computer Science
Spring 2019
West Lafayette, IN

University of Kentucky
B.S. in Computer Science
Spring 2013
Lexington, KY

SKILLS

Languages
C • C++ • Python • Assembly
Java • Ruby • PHP • R • Go
LaTeX• HTML • CSS • MySQL

Environments
Linux • Windows • Android
OpenBSD

Libraries/Tools
LLVM • git • scikit-learn
Selenium • WinDbg
OllyDbg • IDA
Microsoft Detours • Visual Studio

COURSEWORK

Graduate
Software Engineering
Operating Systems
Security
Automated Program Reasoning
Parallel Computing
Networking
Compilers
Algorithms
Modeling and Simulation

Undergraduate
Software Engineering
Operating Systems
Security
Networks
Programming Languages
Algorithms
Theory of Computing
Artificial Intelligence

EXPERIENCE

Purdue University | Research Assistant
2014 – 2019 | West Lafayette, IN

Worked with advisers, Xiangyu Zhang and Roopsha Samanta, researching topics in the field of software engineering, programming languages, and program verification.

- **Symbolic Execution Optimizations**
  - Found optimizations that drastically reduce the time required to symbolically execute programs that are control dependent on large arrays
  - Implemented optimization in the symbolic execution engine KLEE
- **Program Clustering**
  - Implemented a tool, SemCluster, that leverages machine learning and program semantics to classify programs based on their bugs and implementation strategies

MIT Lincoln Laboratory | Summer Intern
Summer 2014, 2015 | Lexington, MA

Worked with advisor Hamed Okhravi in the Cyber Analytics and Decision systems group to develop a tool, TRACER, for defending against information leaks and memory disclosures.

Purdue University | Teaching Assistant
2014 – 2018 | West Lafayette, IN

- Intro. to C Programming (Fall 2018)
- Graduate Software Engineering (Fall 2017)
- Software Testing (Spring 2017)
- Networking (Spring 2014)

Sandia National Laboratory | Cyber Defenders Intern
Summer 2012 | West Lafayette, IN
Worked with a team of interns researching malware detection, genetic programming algorithms, and super computer simulations.

PUBLICATIONS

Perry, D. M., Kim, D., Samanta, R., & Zhang, X. (2019, June). SemCluster: Clustering of Imperative Programming Assignments Based on Quantitative Semantic Features. In Proceedings of the 40th ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI '19). ACM.

You, W., Liu, X., Ma, S., Perry, D., Zhang, X., & Liang, B. (2019, May). SLF: Fuzzing without Valid Seed Inputs. In Proceedings of the 41st International Conference on Software Engineering (ICSE '19). ACM.

Perry, D. M., Mattavelli, A., Zhang, X., & Cadar, C. (2017, July). Accelerating array constraints in symbolic execution. In Proceedings of the 26th ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA '17). ACM.

Huang, J., Aafer, Y., Perry, D., Zhang, X., & Tian, C. (2017, October). UI driven Android application reduction. In Proceedings of the 32nd IEEE/ACM International Conference on Automated Software Engineering (ASE '17). IEEE Press.

Kim, D., Kwon, Y., Liu, P., Kim, I. L., Perry, D. M., Zhang, X., & Rodriguez-Rivera, G. (2016). Apex: Automatic Programming Assignment Error Explanation (OOPSLA'16). ACM.