

Benjamin M. Lambeth

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EDUCATION

BS, Computer Science
University of Illinois at Urbana Champaign

2015 - 2019 (In Progress)
GPA: 3.82

INTERNSHIPS

Qualcomm Research and Development

May 2017 - Aug 2017

Developed a Regression Test Selection tool that is being used internally at Qualcomm. The tool speeds up testing by only running the tests that execute new code and ignoring all other tests. For one project, I brought test execution times down from approximately 4 hours to minutes or seconds depending on the change. Awarded the Roberto Padovani Scholarship for this work, which is awarded for the most substantial work done by an intern that summer. My manager was Vince Baglin and my mentor was Shashank Khanvilkar.

Facebook

June 2018 - Aug 2018

Worked on HHVM and the Hack language. Created a new datatype, Shapes, in HHVM. Shapes are designed to operate very similarly to arrays and dicts with the intention to migrate their functionality into something more typesafe later. This work spanned 3 months and required substantial understanding of the entire HHVM JIT Compiler stack. The code I wrote can be found at <https://github.com/facebook/hhvm/commits?author=azy2>

RESEARCH

Research Assistant for Darko Marinov and Alex Gyori

Apr 2016 - Dec 2016

I did research in the field of Software Testing. I primarily worked on the tool NonDex ([link](#)), which is a tool for detecting and debugging wrong assumptions on under-determined Java APIs. Such assumptions can hurt portability for an application when they are moved to other environments with a different Java runtime. NonDex explores different behaviors of under-determined APIs and reports test failures under different explored behaviors. I also contributed to numerous open-source projects by fixing tests that NonDex flagged.

PROJECTS

Plan8 ([link](#))

Plan8 is a small operating system I developed with 2 other students for a class at The University of Illinois at Urbana-Champaign. The OS supports interrupts, an in memory file system, virtual memory, paging, user space programs, a basic set of system calls (such as file I/O), task scheduling, a shell, and user signals. I won 2nd place in the class competition against 50+ other teams.

OverSeer ([link](#))

Overseer is a dorm management system I developed with 7 other students over the course of a semester. Overseer is a full stack web application written in Python, MySQL, and Bootstrap 4. It allows dorms and residence halls to manage students, meal plans, packages, and staff in a clean and efficient online system.

PUBLICATIONS

A. Gyori, **B. Lambeth**, A. Shi, O. Legunsen, and D. Marinov. NonDex: A tool for detecting and debugging wrong assumptions on Java API specifications. In *Proceedings of the 24th ACM SIGSOFT International Symposium on the Foundations of Software Engineering (FSE 2016)*. Acceptance Rate: 13/32 - 41%, [link](#).

A. Gyori, **B. Lambeth**, S. Khurshid, and D. Marinov. Exploring Underdetermined Specifications using Java PathFinder. In *Java Pathfinder Workshop 2016, Software Engineering Notes (SEN)*, [link](#).

AWARDS/GRANTS

NSF Travel Grant for attendance at <i>The International Symposium on the Foundations of Software Engineering (FSE) 2016</i>	\$1,000
Qualcomm Roberto Padovani Scholarship for most substantial contribution as an intern	\$5,000