

INTERESTS	Compiler or security research in a Linux environment.	
EDUCATION	Virginia Polytechnic Institute and State University	Blacksburg, Virginia
	<i>B.S. Computer Science</i>	August 2011 – May 2014
	<ul style="list-style-type: none">• Overall GPA: 3.98/4.00 Major GPA: 4.00/4.00• Courses: Software Design, Data Structures, Numerical Methods, Cryptography, Computer Organization• Course Projects: AES-128 (Java), MIPS assembler (C), PR Quadtree (Java)	
RESEARCH	Virginia Tech Computer Science Department	Blacksburg, Virginia
EXPERIENCE	<i>Undergraduate Research Assistant</i>	January 2013 – Present
	<ul style="list-style-type: none">• Implement quasi-Newton stochastic optimization algorithm in Fortran 95. Specific libraries used include BLAS and LAPACK.	
	Systems Software Research Group	Blacksburg, Virginia
	<i>Undergraduate Research Assistant</i>	November 2012 – Present
	<ul style="list-style-type: none">• Work supported with NSF and NEEC REU grants.• Source-to-source compiler research on OpenMP to CUDA translation. Specifically, developed a compiler in C++ with the ROSE compiler framework for automatic OpenMP to CUDA translation.• Assisted development with runtime execution prediction. Created Scala scripts to parse raw data for feature vectors to be used by WEKA's machine learning algorithms.• Developed Bash scripts to automate benchmarking on heterogeneous hardware.	
	Magnum Research Group	Blacksburg, Virginia
	<i>Undergraduate Research Assistant</i>	May 2012 – Present
	<ul style="list-style-type: none">• Work supported with Northrup Grumman and ARO REU grants.• Dynamic Android malware research resulting in primary authorship on a conference publication.• Implemented a framework with Bash scripts to dynamically profile APKs and analyze popular machine learning algorithms with WEKA. Reimplemented framework in Scala.• Developed VC# programs for a pilot study on manufacturing cyber-physical security.• Assisted C++ and Make development for a deployment optimization framework. Specific libraries used include TCLAP and rapidxml.• Corresponded with another research group and modified the Android source to provide non-standard logging information for dynamic malware analysis.• Configured a Gerrit server to host code review for the custom Android source.	
INDUSTRY	Qualcomm, Inc.	San Diego, California
EXPERIENCE	<i>Source Integrity Team Software Intern</i>	May 2013 – August 2013
	<ul style="list-style-type: none">• Developed an interface using Javascript and HTML using the D3 library to modify an XML-based grammar for fuzz vector generation.• Developed an XML-based grammar translator in C++ with the Xerces XML parser.• Assisted integration of a C++ fuzzer into a SCons build system.	
	Phoenix Integration, Inc.	Blacksburg, Virginia
	<i>Software Engineer Intern</i>	May 2012 – August 2012
	<ul style="list-style-type: none">• Migrated the web server of CenterLink, a grid computing application, from Tomcat 5 to Tomcat 7.• Integrated a new licensing mode into CenterLink via FLEXlm and Java.• Improved the testing (JUnit and NUnit) and installation (Ant, InstallShield, and Make) frameworks.• Fulfilled bug fixes and feature requests in VC++, VC#, and Java.	
	Sunapsys, Inc.	Vinton, Virginia
	<i>Network Administrator Intern</i>	January 2011 – August 2011
	<ul style="list-style-type: none">• Configured virtualized DHCP, DNS, and PDC servers in Linux to replace existing Windows servers.• Created Bash scripts to back up data incrementally and monitor the status of the servers.	
TEACHING	Virginia Tech Computer Science Department	Blacksburg, Virginia
EXPERIENCE	<i>Undergraduate Teaching Assistant</i>	January 2013 – May 2013
	<ul style="list-style-type: none">• Assisted students in a software design and data structures class using Java and Android.	

PUBLICATIONS	<ul style="list-style-type: none"> • “Applying machine learning classifiers to dynamic Android malware detection at scale.” Brandon Amos, Hamilton Turner, Jules White. <i>IWCMC’13 Security, Trust, and Privacy Symposium</i>. Cagliari, Italy, July 2013.
SKILLS	<ul style="list-style-type: none"> • Environments: Eclipse**, NetBeans*, vim/gdb***, Visual Studio** • Frameworks: Drupal*, .NET*, ZK* • Languages: Bash**, C/C++**, C#*, Fortran*, HTML/CSS*, L^AT_EX**, Java***, JavaScript*, <i>Mathematica**</i>, PHP*, Python**, R*, Scala* • Software: BIND9*, i3**, Make**, Ratpoison**, Samba**, Tomcat*, Zimbra* • Systems: Android**, Linux***, Windows** • Version Control/Review: Gerrit*, Git**, Subversion** <p>Exposure* – Minimal knowledge** – Adequate knowledge*** – Maximum knowledge****</p>
PROJECTS	<p>Personal Blog and Website – http://bamos.github.io July 2012 – Present</p> <ul style="list-style-type: none"> • Hosted on GitHub Pages. Uses Markdown for posts and Jekyll for static HTML generation. <p>GitHub Portfolio – http://github.com/bamos April 2011 – Present</p> <ul style="list-style-type: none"> • Hosts code samples, original source code, and patches for open source projects. • 15 original repositories. <ul style="list-style-type: none"> ◦ AES - An educational Java implementation of AES-128. Includes polynomial inverses in AES’ Galois finite field via Euler’s extended GCD algorithm and prints the state after each step. ◦ bamos.github.com - My personal website. ◦ cpp-expression-parser - Expression parsing in C++ with Dijkstra’s Shunting-yard algorithm. ◦ dotfiles - A small collection of configuration files for my Linux systems. ◦ latex-resume-cv - My LaTeX resume and CV. Uses Make and produces PDFs and (rough) text versions of my resume and CV from the same LaTeX files. ◦ latex-templates - Centralization of LaTeX templates and classes I use. ◦ list-github-repos - Obtain a LaTeX list of all of a user’s public Github repos and descriptions. ◦ mew - Website to produce textual cat noises. ◦ mutt-mass-mailer - M3 parses a flat file and uses mutt to email many people different messages. ◦ parsec-benchmark - An unofficial mirror of the core PARSEC 3.0 benchmark suite with patches to run on x86_64 Arch Linux and generalize builds. ◦ reading-list - A collection of my reading list and notes. ◦ safegit - Wraps git to detect sensitive data before commits by using fuzzy Rabin fingerprints. ◦ scala-sorting - Educational implementations of popular sorting algorithms in Scala. Only tested on small integer data sets. Your mileage may vary! ◦ simple-fortran-routines - Miscellaneous simple Fortran 95 routines. ◦ simple-shell-scripts - A small potpourri of simple Bash shell scripts • 3 forked repositories. <ul style="list-style-type: none"> ◦ antimalware - Dynamic malware analysis for the Android platform ◦ gv-app - Google Voice command line client ◦ mirror-android-repo - Instructions and files for setting up a server that mirrors the entire Android project.

HONORS & AWARDS

- Benjamin F. Bock Scholarship, Virginia Tech Engineering, 2013
- Sophomore Scholar Award, Virginia Tech Computer Science, 2013
 - Given to the sophomore in Computer Science with the most outstanding academic record.
- University Honors, Virginia Tech, 2012–2013
- Intelligence Community Center of Academic Excellence Scholar, Virginia Tech, 2012–2013
 - Merit-based scholarship that provides a security-based research fellowship.
- Dean's List with Distinction, Virginia Tech, 2011–2013
- Engineering Scholarship, Roanoke County Public Schools Education Foundation, 2011
 - Merit-based scholarship presented annually to one student in the graduating Engineering class.
- Papa John's Scholarship, 2011
- Gay B. Shober Memorial Scholarship, Roanoke County Federal Credit Union, 2011
- Pamplin Leader Scholarship, Virginia Polytechnic Institute and State University, 2011
 - Merit-based scholarship presented to one student from each public high school in Virginia.
- I. Luck Gravett Memorial Scholarship, Scottish Rite of Freemasonry, 2011
- Salem–Roanoke County Chamber of Commerce Scholarship, 2011
- Virginia Aerospace Science and Technology Scholar, National Space Grant Foundation, 2010
 - Selected as an attendee of a summer academy at NASA Langley Research Center.

ACTIVITIES

- Honors Residential College, Virginia Tech, 2013
- Hokies Pep Band, Virginia Tech, 2012–2013
- Computer Science Community Service, Virginia Tech, 2012
- Symphony Band, Virginia Tech, 2011–2012
- Linux and Unix Users Group, Virginia Tech, 2011–2012
- Galileo Living–Learning Community, Virginia Tech, 2011–2012