

<http://bamos.github.io>

INTERESTS	Compilers, mobile computing, networking, parallel computing, security, and systems.	
EDUCATION	Virginia Polytechnic Institute and State University	Blacksburg, Virginia
	<i>B.S. Computer Science</i>	August 2011 – May 2014
	• 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
	• 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
	• 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
	• Work supported with Northrup Grumman REU grant.	
	• 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 .	
	• 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
	• Developed an XML-based grammar translator in C++ with the Xerces XML parser.	
	• Developed a visual interface in Javascript and HTML using the D3 library to modify an XML-based grammar for fuzz vector generation.	
	Phoenix Integration, Inc.	Blacksburg, Virginia
	<i>Software Engineer Intern</i>	May 2012 – August 2012
	• 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
	• 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
	• 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. • 13 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. ◦ fortran-simple-routines - Miscellaneous simple Fortran 95 routines. ◦ latex-templates - Centralization of LaTeX templates and classes I use. ◦ list-github-repos - Obtain a pretty list of all of a user’s public Github repos. ◦ mew - Website to produce random cat noises. ◦ 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. ◦ scala-sorting - Educational implementations of popular sorting algorithms in Scala. Only tested on small integer data sets. Your mileage may vary! ◦ simple-shell-scripts - A small potpourri of simple Bash shell scripts • 6 forked repositories. <ul style="list-style-type: none"> ◦ antimalware - Dynamic malware analysis for the Android platform ◦ gv-app - Google Voice command line client ◦ io-slides - Mirror of io-2012-slides project ◦ mirror-android-repo - Instructions and files for setting up a server that mirrors the entire Android project. ◦ music-organizer - Automatically organize, sort or rename your mp3 music collection ◦ virustotal - Pythonic VirusTotal Public API 2.0 client

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
- Trumpet Section Leader, Marching Band, Northside High School, 2010–2011
- Tennis Team, Northside High School, 2008–2011