

INTERESTS	Compilers, mobile computing, networking, parallel computing, security, and systems.	
EDUCATION	<b>Virginia Polytechnic Institute and State University</b>	Blacksburg, Virginia
	<i>B.S. Computer Science</i>	<b>August 2011 – May 2014</b>
	• <b>Overall GPA:</b> 3.98/4.00	<b>Major GPA:</b> 4.00/4.00
	• <b>Courses:</b> Software Design, Data Structures, Numerical Methods, Cryptography, Computer Organization	
	• <b>Course Projects:</b> AES-128 ( <b>Java</b> ), MIPS assembler ( <b>C</b> ), PR Quadtree ( <b>Java</b> )	
RESEARCH	<b>Virginia Tech Computer Science Department</b>	Blacksburg, Virginia
EXPERIENCE	<i>Undergraduate Research Assistant</i>	<b>January 2013 – Present</b>
	• Implement quasi-Newton stochastic optimization algorithm in <b>Fortran 95</b> . Specific libraries used include <b>BLAS</b> and <b>LAPACK</b> .	
	<b>Systems Software Research Group</b>	Blacksburg, Virginia
	<i>Undergraduate Research Assistant</i>	<b>November 2012 – Present</b>
	• Work supported with NSF and NEEC REU grants.	
	• Source-to-source compiler research on OpenMP to CUDA translation. Specifically, developed a compiler in <b>C++</b> with the <b>ROSE</b> compiler framework for automatic OpenMP to CUDA translation.	
	• Assisted development with runtime execution prediction. Created <b>Scala</b> scripts to parse raw data for feature vectors to be used by <b>WEKA</b> 's machine learning algorithms.	
	• Developed <b>Bash</b> scripts to automate benchmarking on heterogeneous hardware.	
	<b>Magnum Research Group</b>	Blacksburg, Virginia
	<i>Undergraduate Research Assistant</i>	<b>May 2012 – Present</b>
	• 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 <b>Bash</b> scripts to dynamically profile APKs and analyze popular machine learning algorithms with <b>WEKA</b> . Reimplemented framework in <b>Scala</b> .	
	• Developed <b>VC#</b> programs for a pilot study on manufacturing cyber-physical security.	
	• Assisted <b>C++</b> and <b>Make</b> development for a deployment optimization framework.	
	Specific libraries used include <b>TCLAP</b> and <b>rapidxml</b> .	
	• Corresponded with another research group and modified the <b>Android source</b> to provide non-standard logging information for dynamic malware analysis.	
	• Configured a Gerrit server to host code review for the custom Android source.	
INDUSTRY	<b>Qualcomm, Inc.</b>	San Diego, California
EXPERIENCE	<i>Source Integrity Team Software Intern</i>	<b>May 2013 – August 2013</b>
	• Developed an interface using <b>Javascript</b> and <b>HTML</b> using the <b>D3</b> library to modify an XML-based grammar for fuzz vector generation.	
	• Developed an XML-based grammar translator in <b>C++</b> with the <b>Xerces</b> XML parser.	
	• Assisted integration of a <b>C++</b> fuzzer into a <b>SCons</b> build system.	
	<b>Phoenix Integration, Inc.</b>	Blacksburg, Virginia
	<i>Software Engineer Intern</i>	<b>May 2012 – August 2012</b>
	• Migrated the web server of CenterLink, a grid computing application, from Tomcat 5 to Tomcat 7.	
	• Integrated a new licensing mode into CenterLink via <b>FLEXlm</b> and <b>Java</b> .	
	• Improved the testing ( <b>JUnit</b> and <b>NUnit</b> ) and installation ( <b>Ant</b> , <b>InstallShield</b> , and <b>Make</b> ) frameworks.	
	• Fulfilled bug fixes and feature requests in <b>VC++</b> , <b>VC#</b> , and <b>Java</b> .	
	<b>Sunapsys, Inc.</b>	Vinton, Virginia
	<i>Network Administrator Intern</i>	<b>January 2011 – August 2011</b>
	• Configured virtualized DHCP, DNS, and PDC servers in Linux to replace existing Windows servers.	
	• Created <b>Bash</b> scripts to back up data incrementally and monitor the status of the servers.	
TEACHING	<b>Virginia Tech Computer Science Department</b>	Blacksburg, Virginia
EXPERIENCE	<i>Undergraduate Teaching Assistant</i>	<b>January 2013 – May 2013</b>
	• Assisted students in a software design and data structures class using <b>Java</b> and <b>Android</b> .	

PUBLICATIONS	<ul style="list-style-type: none"> <li>• “Applying machine learning classifiers to dynamic Android malware detection at scale.” <b>Brandon Amos</b>, Hamilton Turner, Jules White. <i>IWCMC’13 Security, Trust, and Privacy Symposium</i>. Cagliari, Italy, July 2013.</li> </ul>
SKILLS	<ul style="list-style-type: none"> <li>• <b>Environments:</b> Eclipse**, NetBeans*, vim/gdb***, Visual Studio**</li> <li>• <b>Frameworks:</b> Drupal*, .NET*, ZK*</li> <li>• <b>Languages:</b> Bash**, C/C++**, C#*, Fortran*, HTML/CSS*, L<sup>A</sup>T<sub>E</sub>X**, Java***, JavaScript*, <i>Mathematica**</i>, PHP*, Python**, R*, Scala*</li> <li>• <b>Software:</b> BIND9*, i3**, Make**, Ratpoison**, Samba**, Tomcat*, Zimbra*</li> <li>• <b>Systems:</b> Android**, Linux***, Windows**</li> <li>• <b>Version Control/Review:</b> Gerrit*, Git**, Subversion**</li> </ul> <p>Exposure* – Minimal knowledge** – Adequate knowledge*** – Maximum knowledge****</p>
PROJECTS	<p><b>Personal Blog and Website</b> – <a href="http://bamos.github.io">http://bamos.github.io</a> <b>July 2012 – Present</b></p> <ul style="list-style-type: none"> <li>• Hosted on GitHub Pages. Uses Markdown for posts and Jekyll for static HTML generation.</li> </ul> <p><b>GitHub Portfolio</b> – <a href="http://github.com/bamos">http://github.com/bamos</a> <b>April 2011 – Present</b></p> <ul style="list-style-type: none"> <li>• Hosts code samples, original source code, and patches for open source projects.</li> <li>• 15 original repositories. <ul style="list-style-type: none"> <li>◦ <b>AES</b> - 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.</li> <li>◦ <b>bamos.github.com</b> - My personal website.</li> <li>◦ <b>cpp-expression-parser</b> - Expression parsing in C++ with Dijkstra’s Shunting-yard algorithm.</li> <li>◦ <b>dotfiles</b> - A small collection of configuration files for my Linux systems.</li> <li>◦ <b>latex-resume-cv</b> - My LaTeX resume and CV. Uses Make and produces PDFs and (rough) text versions of my resume and CV from the same LaTeX files.</li> <li>◦ <b>latex-templates</b> - Centralization of LaTeX templates and classes I use.</li> <li>◦ <b>list-github-repos</b> - Obtain a pretty list of all of a user’s public Github repos.</li> <li>◦ <b>mew</b> - Website to produce textual cat noises.</li> <li>◦ <b>mutt-mass-mailer</b> - M3 parses a flat file and uses mutt to email many people different messages.</li> <li>◦ <b>parsec-benchmark</b> - An unofficial mirror of the core PARSEC 3.0 benchmark suite with patches to run on x86_64 Arch Linux and generalize builds.</li> <li>◦ <b>reading-list</b> - A collection of my reading list and notes.</li> <li>◦ <b>safegit</b> - Wraps git to detect sensitive data before commits by using fuzzy Rabin fingerprints.</li> <li>◦ <b>scala-sorting</b> - Educational implementations of popular sorting algorithms in Scala. Only tested on small integer data sets. Your mileage may vary!</li> <li>◦ <b>simple-fortran-routines</b> - Miscellaneous simple Fortran 95 routines.</li> <li>◦ <b>simple-shell-scripts</b> - A small potpourri of simple Bash shell scripts</li> </ul> </li> <li>• 3 forked repositories. <ul style="list-style-type: none"> <li>◦ <b>antimalware</b> - Dynamic malware analysis for the Android platform</li> <li>◦ <b>gv-app</b> - Google Voice command line client</li> <li>◦ <b>mirror-android-repo</b> - Instructions and files for setting up a server that mirrors the entire Android project.</li> </ul> </li> </ul>

#### 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