

<http://bamos.github.io>

INTERESTS	<b>Compiler, mobile, or security</b> research or development in <b>Linux</b> . Seeking a PhD fellowship starting May 2014 or internship from May–August 2014.	
EDUCATION	<b>Virginia Polytechnic Institute and State University</b> <i>B.S. Computer Science</i> • <b>Overall GPA:</b> 3.98/4.00	Blacksburg, Virginia <b>August 2011 – May 2014</b> <b>Major GPA:</b> 4.00/4.00
RESEARCH EXPERIENCE	<b>Virginia Tech Computer Science Department</b> <i>Undergraduate Research Assistant, Advisor - Dr. Layne Watson</i> • Implement quasi-Newton stochastic optimization algorithm in <b>Fortran 95</b> . Specific libraries used include <b>BLAS</b> and <b>LAPACK</b> .	Blacksburg, Virginia <b>January 2013 – Present</b>
	<b>Systems Software Research Group</b> <i>Undergraduate Research Assistant, Advisor - Dr. Binoy Ravindran</i> • Work supported with NSF and NEEC REU grants. • Developed an automatic <b>OpenMP</b> to <b>CUDA</b> translator in <b>C++</b> with the <b>ROSE</b> compiler framework. • 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.	Blacksburg, Virginia <b>November 2012 – Present</b>
	<b>Magnum Research Group</b> <i>Undergraduate Research Assistant, Advisor - Dr. Jules White</i> • Work supported with ARO REU grant. • Android <b>malware detection research</b> resulting in primary authorship on a conference publication. • Working on a distributed <b>Actor</b> system using <b>Scala</b> for <b>machine learning</b> classification of APKs. • Developed <b>VC#</b> programs for a pilot study on manufacturing cyber-physical security. • Assisted <b>C++</b> and <b>Make</b> development in <b>Linux</b> for a deployment optimization framework. Specific libraries used include <b>TCLAP</b> and <b>rapidxml</b> . • Modified the <b>Android source</b> to provide non-standard logging information for dynamic malware analysis.	Blacksburg, Virginia <b>May 2012 – Present</b>
INDUSTRY EXPERIENCE	<b>Qualcomm, Inc.</b> <i>Source Integrity Team Software Intern</i> • Developed a <b>web application</b> to modify an XML-based grammar for fuzz vector generation. Implemented with client-side <b>HTML</b> and <b>js</b> , using <b>D3</b> for graphics and <b>Handlebars</b> for templating. • Developed an XML-based grammar translator in <b>C++</b> with the <b>Xerces</b> XML parser in <b>Linux</b> . Reimplemented in <b>Python</b> using the <b>ElementTree</b> XML API for better analysis and tree transformation.	San Diego, California <b>May 2013 – August 2013</b>
	<b>Phoenix Integration, Inc.</b> <i>Software Engineer Intern</i> • Integrated a new licensing mode into CenterLink, a grid computing application, using <b>FLEXlm</b> and <b>Java</b> . • Assisted development of industry software in <b>VC++</b> , <b>VC#</b> , <b>Java</b> , and <b>Tomcat</b> . • Improved the testing ( <b>JUnit</b> and <b>NUnit</b> ) and installation ( <b>Ant</b> , <b>InstallShield</b> , and <b>Make</b> ) frameworks.	Blacksburg, Virginia <b>May 2012 – August 2012</b>
	<b>Sunapsys, Inc.</b> <i>Network Administrator Intern</i> • Configured virtualized DHCP, DNS, and PDC servers in <b>Linux</b> to replace existing Windows servers. • Created <b>Bash</b> scripts to back up data incrementally and monitor the status of the servers.	Vinton, Virginia <b>January 2011 – August 2011</b>
TEACHING EXPERIENCE	<b>Virginia Tech Computer Science Department</b> <i>Undergraduate Teaching Assistant</i> • Assisted students in a software design and data structures class using <b>Java</b> and <b>Android</b> .	Blacksburg, Virginia <b>January 2013 – May 2013</b>
CONFERENCE PUBLICATIONS	• “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.	

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> i3wm**, Make**, Ratpoison**, Samba**, Tomcat*, Zimbra*</li> <li>• <b>Systems:</b> Android**, Linux***</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 <b>Markdown</b> for posts and <b>Jekyll</b> for static HTML generation.</li> <li>• <b>27 posts</b> across the following tags, listed by highest frequency. Python, LaTeX, Bash, Linux, Scala, Android, CUDA, Mathematica, Fortran, C++</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>• 18 original repositories. <ul style="list-style-type: none"> <li>◦ <a href="http://bamos.github.io">bamos.github.io</a>, dotfiles, ical-availability, latex-templates, list-github-repos, mew, parsec-benchmark, reading-list, scala-sorting, simple-fortran-routines, simple-python-scripts, simple-shell-scripts</li> <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>c++-expression-parser</b> - Expression parsing in C++ with Dijkstra's Shunting-yard algorithm.</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>mbox-convos</b> - Export all emails in an mbox mailbox to or from somebody to a PDF.</li> <li>◦ <b>mutt-mass-mailer</b> - M3 parses a flat file and uses mutt to email many people different messages.</li> <li>◦ <b>safegit</b> - Wraps git to detect sensitive data before commits by using fuzzy Rabin fingerprints.</li> </ul> </li> <li>• 5 forked repositories. <ul style="list-style-type: none"> <li>◦ <b>antimalware</b> - Dynamic malware analysis for the Android platform</li> <li>◦ <b>BigOCheatSheet</b> - Space and time complexities of popular algorithms and data structures.</li> <li>◦ <b>gv-app</b> - Google Voice command line client</li> <li>◦ <b>mirror-android-repo</b> - Instructions and files to set up a server mirroring the entire Android project.</li> <li>◦ <b>schale</b> - A subprocess interface for Scala</li> </ul> </li> </ul>
HONORS & AWARDS	<ul style="list-style-type: none"> <li>• Qualstar Award, Qualcomm, 2013</li> <li>• Benjamin F. Bock Scholarship, Virginia Tech Engineering, 2013</li> <li>• Sophomore Scholar Award, Virginia Tech Computer Science, 2013 <ul style="list-style-type: none"> <li>◦ Given to the sophomore in Computer Science with the most outstanding academic record.</li> </ul> </li> <li>• University Honors, Virginia Tech, 2012–2013</li> <li>• Intelligence Community Center of Academic Excellence Scholar, Virginia Tech, 2012–2013 <ul style="list-style-type: none"> <li>◦ Merit-based scholarship that provides a security-based research fellowship.</li> </ul> </li> <li>• Dean's List with Distinction, Virginia Tech, 2011–2013</li> <li>• Engineering Scholarship, Roanoke County Public Schools Education Foundation, 2011 <ul style="list-style-type: none"> <li>◦ Merit-based scholarship presented annually to one student in the graduating Engineering class.</li> </ul> </li> <li>• Papa John's Scholarship, 2011</li> <li>• Gay B. Shober Memorial Scholarship, Roanoke County Federal Credit Union, 2011</li> <li>• Pamplin Leader Scholarship, Virginia Polytechnic Institute and State University, 2011 <ul style="list-style-type: none"> <li>◦ Merit-based scholarship presented to one student from each public high school in Virginia.</li> </ul> </li> <li>• I. Luck Gravett Memorial Scholarship, Scottish Rite of Freemasonry, 2011</li> <li>• Salem–Roanoke County Chamber of Commerce Scholarship, 2011</li> <li>• Virginia Aerospace Science and Technology Scholar, National Space Grant Foundation, 2010 <ul style="list-style-type: none"> <li>◦ Selected as an attendee of a summer academy at NASA Langley Research Center.</li> </ul> </li> </ul>
ACTIVITIES	<ul style="list-style-type: none"> <li>• Honors Residential College, Virginia Tech, 2013</li> <li>• Hokies Pep Band, Virginia Tech, 2012–2013</li> <li>• Computer Science Community Service, Virginia Tech, 2012</li> <li>• Symphony Band, Virginia Tech, 2011–2012</li> <li>• Linux and Unix Users Group, Virginia Tech, 2011–2012</li> <li>• Galileo Living–Learning Community, Virginia Tech, 2011–2012</li> <li>• Trumpet Section Leader, Marching Band, Northside High School, 2010–2011</li> <li>• Tennis Team, Northside High School, 2008–2011</li> </ul>