brandon amos.

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http://bamos.github.io

INTERESTS	**Security**, **compilers**, **systems**, **parallel computing**, **mobile computing**, and **networking**.

EDUCATION

Virginia Polytechnic Institute and State University — Blacksburg, Virginia
B.S. Computer Science — **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**)

EXPERIENCE

Qualcomm, Inc. — San Diego, California
Source Integrity Team Intern — **May 2013 – August 2013**
- Developed an XML translator in **C++** with the **Xerces** library.

Virginia Tech Computer Science Department — Blacksburg, Virginia
Undergraduate Research Assistant — **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
Undergraduate Research Assistant — **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
Undergraduate Research Assistant — **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.

Virginia Tech Computer Science Department — Blacksburg, Virginia
Undergraduate Teaching Assistant — **January 2013 – May 2013**
- Assisted students in a software design and data structures class using **Java** and **Android**.

Phoenix Integration, Inc. — Blacksburg, Virginia
Software Engineer — **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
Network Administrator — **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.

Precision Steel Manufacturing Corp. — Roanoke, Virginia
Drafter — **June 2010 – August 2011**
- Drafted 2d flattened diagrams of 3d parts to be laser cut in SolidWorks.

SKILLS	• **Environments**: Eclipse**, NetBeans*, vim/gdb***, Visual Studio**
	• **Frameworks**: Drupal*, .NET*, ZK*
	• **Languages**: Bash**, C/C++**, C#*, Fortran*, HTML/CSS*, LaTeX**, Java***, JavaScript*,
	Mathematica**, PHP*, Python**, R*, Scala*
	• **Software**: BIND9*, i3**, Make**, Ratpoison**, Samba**, Tomcat*, Zimbra*
	• **Systems**: Android**, Linux***, Windows**
	• **Version Control/Review**: Gerrit*, Git**, Subversion**

Exposure* – Minimal knowledge** – Adequate knowledge*** – Maximum knowledge****

PUBLICATIONS	• "Applying machine learning classifiers to dynamic Android malware detection at scale."
	Brandon Amos, Hamilton Turner, Jules White.
	IWCMC'13 Security, Trust, and Privacy Symposium. Cagliari, Italy, July 2013.

PROJECTS	**Personal Blog and Website** – http://bamos.github.io	**July 2012 – Present**
	• Hosted on GitHub Pages. Uses Markdown for posts and Jekyll for static HTML generation.	
	GitHub Portfolio – http://github.com/bamos	**April 2011 – Present**
	• Hosts code samples, original source code, and patches for open source projects.	

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