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http://bamos.io

INTERESTS	**Compiler**, **mobile**, or **security** research or development in **Linux**. Seeking a PhD fellowship starting May 2014 or internship from May–August 2014.

EDUCATION	**Virginia Tech**	Blacksburg, Virginia
	B.S. Computer Science, Honors Scholar. Mathematics minor.	**August 2011 – May 2014**
	• **Overall GPA:** 3.98/4.00	**Major GPA:** 4.00/4.00

RESEARCH EXPERIENCE	**Virginia Tech Computer Science Department**	Blacksburg, Virginia
	Undergraduate Research Assistant, Advisor - Dr. Layne Watson	**January 2013 – Present**
	• Optimization algorithm in **Fortran 95** resulting in primary authorship on a conference publication.	
	Systems Software Research Group	Blacksburg, Virginia
	Undergraduate Research Assistant, Advisor - Dr. Binoy Ravindran	**November 2012 – Present**
	• Work supported with NSF and NEEC REU grants.	
	• Automatic **OpenMP** to **CUDA** translation using **C++** and the **ROSE** compiler framework.	
	• **Scala** and **Bash** development in **Linux**.	
	Magnum Research Group	Blacksburg, Virginia
	Undergraduate Research Assistant, Advisor - Dr. Jules White	**May 2012 – Present**
	• Work supported with ARO REU grant.	
	• Android **malware detection research** resulting in primary authorship on a conference publication.	
	• Created a distributed **Actor** system using **Scala** for **machine learning** classification of APKs.	
	• Developed **VC#** programs for a pilot study on manufacturing cyber-physical security.	
	• Assisted **C++** and **Make** development in **Linux** for a deployment optimization framework. Specific libraries used include **TCLAP** and **rapidxml**.	
	• Modified the **Android source** to provide non-standard logging information for dynamic malware analysis.	

INDUSTRY EXPERIENCE	**Qualcomm, Inc.**	San Diego, California
	Source Integrity Team Software Intern	**May 2013 – August 2013**
	• Developed a **web application** to modify an XML-based grammar for fuzz vector generation. Implemented with client-side **HTML** and **js**, using **D3** for graphics and **Handlebars** for templating.	
	• Developed an XML-based grammar translator in **C++** with the **Xerces** XML parser in **Linux**. Reimplemented in **Python** using the **ElementTree** XML API for better analysis and tree transformation.	
	Phoenix Integration, Inc.	Blacksburg, Virginia
	Software Engineer Intern	**May 2012 – August 2012**
	• Integrated a new licensing mode into CenterLink, a grid computing application, using **FLEXlm** and **Java**.	
	• Assisted development of industry software in **VC++**, **VC#**, **Java**, and **Tomcat**.	
	• Improved the testing (**JUnit** and **NUnit**) and installation (**Ant**, **InstallShield**, and **Make**) frameworks.	
	Sunapsys, Inc.	Vinton, Virginia
	Network Administrator Intern	**January 2011 – August 2011**
	• **Linux** server configuration and **Bash** development.	

TEACHING EXPERIENCE	**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**.	

CONFERENCE 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. • "Fortran 95 implementation of QNSTOP for global and stochastic optimization." **Brandon Amos**, David Easterling, Layne Watson, Brent Castle, Michael Trosset, William Thacker. *Submitted.*

MAGAZINE PUBLICATIONS	• "Bad Parts: Are Our Manufacturing Systems At Risk of Silent Cyber-attacks?" Hamilton Turner, **Brandon Amos**, Jules White, Jaime Camelio, Chris Williams, Robert Parker. *Submitted.*

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: i3wm**, Make**, Ratpoison**, Samba**, Tomcat*, Zimbra*
	Systems: Android**, Linux***
	Version Control/Review: Gerrit*, Git***, Subversion**
	Rankings: 1/10* – 3/10** – 5/10*** – 7/10****

Honors & Awards

- Honorable Mention, CRA Outstanding Undergraduate Researcher Award, 2014
  - 1 of 15 North American males awarded honorable mention for exemplary computer science research.
- Qualstar Award, Qualcomm, 2013
- Benjamin F. Bock Merit 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 providing a cyber-security research fellowship.
- Dean's List with Distinction, Virginia Tech, 2011–2013
- Engineering Merit Scholarship, Roanoke County Public Schools Education Foundation, 2011
  - Merit-based scholarship presented annually to one student in the graduating Engineering class.
- Papa John's Merit Scholarship, 2011
- Gay B. Shober Memorial Merit Scholarship, Roanoke County Federal Credit Union, 2011
- Pamplin Leader Scholarship, Virginia Tech, 2011
  - Merit-based scholarship presented to one student from each public high school in Virginia.
- I. Luck Gravett Memorial Merit Scholarship, Scottish Rite of Freemasonry, 2011
- Salem–Roanoke County Chamber of Commerce Merit 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.

Projects

Personal Blog and Website – http://bamos.io   **July 2012 – Present**
- Hosted on GitHub Pages. Uses **Markdown** for posts and **Jekyll** for static HTML generation.
- **27 posts** across the following tags, listed by highest frequency.
  Python, Bash, LaTeX, Linux, Scala, Android, Mathematica, C++, Fortran, CUDA

GitHub Portfolio – http://github.com/bamos   **April 2011 – Present**
- Hosts code samples, original source code, and patches for open source projects.
- 20 original repositories.
  - bamos.github.io, dotfiles, ical-availability, latex-templates, list-github-repos, mew, parsec-benchmark, reading-list, scala-sorting, simple-fortran-routines, simple-python-scripts, simple-shell-scripts
  - **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.
  - **BigOCheatSheetParser** - Parse the most recent version of the BigO Cheat Sheet to produce json, LaTeX, and a PDF.
  - **cpp-expression-parser** - Expression parsing in C++ with Dijkstra's Shunting-yard algorithm.
  - **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.
  - **mbox-convos** - Export all emails in an mbox mailbox to or from somebody to a PDF.
  - **mutt-mass-mailer** - M3 parses a flat file and uses mutt to email many people different messages.
  - **pocl-0.8-llvm-3.5** - Unofficial fork of pocl 0.8 to build with LLVM/Clang 3.5.
  - **safegit** - Wraps git to detect sensitive data before commits by using fuzzy Rabin fingerprints.
- 6 forked repositories.
  - **antimalware** - Dynamic malware analysis for the Android platform
  - **BigOCheatSheet** - Space and time complexities of popular algorithms and data structures.
  - **gv-app** - Google Voice command line client
  - **mirror-android-repo** - Instructions and files to set up a server mirroring the entire Android project.
  - **scalazon** - Idiomatic, opinionated Scala library for AWS
  - **schale** - A subprocess interface for Scala

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