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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 <div align="right">Blacksburg, Virginia</div>
B.S. Computer Science, Honors Scholar. Mathematics minor. <div align="right">August 2011–May 2014</div>
Major GPA: 4.00/4.00, Overall GPA: 3.98/4.00

Research Experience

Virginia Tech Computer Science <div align="right">Blacksburg, Virginia</div>
Undergraduate Research Assistant, Advisor: Dr. Layne Watson <div align="right">January 2013–Present</div>
- Optimization algorithm in **Fortran 95** resulting in primary authorship on a conference publication.

Systems Software Research Group <div align="right">Blacksburg, Virginia</div>
Undergraduate Research Assistant, Advisor: Dr. Binoy Ravindran <div align="right">November 2012–Present</div>
- 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 <div align="right">Blacksburg, Virginia</div>
Undergraduate Research Assistant, Advisor: Dr. Jules White <div align="right">May 2012–Present</div>
- 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.
- Modified the **Android source** to provide non-standard logging information for dynamic malware analysis.

Teaching Experience

Virginia Tech Computer Science Department <div align="right">Blacksburg, Virginia</div>
Undergraduate Teaching Assistant <div align="right">January 2013–May 2013</div>
- Assisted students in a software design and data structures class using **Java** and **Android**.

Publications

Conference

1. "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.
2. "Fortran 95 implementation of QNSTOP for global and stochastic optimization." **Brandon Amos**, David Easterling, Layne Watson, Brent Castle, Michael Trosset, William Thacker. Submitted.

Magazine

1. "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.

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.

Skills

- **Preferred Environments:** Linux***, vim/gdb***, git***, Make**
- **Languages:** Bash**, C/C++**, C#*, Fortran**, HTML/CSS*, LaTeX**, Java**, JavaScript**, *Mathematica***, PHP*, Python***, R*, Scala**
- **Systems:** Android**, Linux***
- **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

Projects

Personal Blog and Website – `http://bamos.io`

- 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

GithHub Portfolio – `http://github.com/bamos`

- Hosts code samples, original source code, and patches for open source projects.
- 20 original repositories, 6 forked repositories.

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