Brandon Amos

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Research Interests

Mobile computing, distributed systems, and computer vision.

Education

○ Ph.D. Student, Computer Science, Carnegie Mellon University, Aug 2014–Present
○ B.S., Computer Science, Virginia Tech, May 2014 (3.99/4.00)

Research Experience

○ Research Assistant, Carnegie Mellon University   Aug 2014–Present
  ○ Advisor: Dr. Mahadev Satyanarayanan
  ○ Area: Mobile computing, distributed systems, and computer vision

○ Undergraduate Research Assistant, Magnum Research Group   May 2012–May 2014
  ○ Advisor: Dr. Jules White
  ○ Area: Mobile computing, cyber-physical systems, and security

○ Undergraduate Research Assistant, Virginia Tech   Jan 2013–May 2014
  ○ Advisor: Dr. Layne Watson
  ○ Area: Scientific computing

○ Undergraduate Research Assistant, Systems Software Research Group   Nov 2012–Mar 2014
  ○ Advisor: Dr. Binoy Ravindran
  ○ Area: Compilers

Teaching Experience

○ Undergraduate TA, Virginia Tech, CS 2114   Jan 2013–May 2013

Publications

Conference Proceedings

[C1] M. Satyanarayanan, P. Simoens, Y. Xiao, P. Pillai, Z. Chen, K. Ha, W. Hu, **B. Amos**, "Edge analytics in the internet of things," in *IEEE Pervasive Computing 2015 (to appear)*, 2015.

[C2] W. Hu, **B. Amos**, Z. Chen, K. Ha, W. Richter, P. Pillai, B. Gilbert, J. Harkes, M. Satyanarayanan, "The case for offload shaping," in *HotMobile 2015*, 2015. [Online]. Available: http://www.cs.cmu.edu/~satya/docdir/hu-hotmobile2015.pdf.

[C3] **B. Amos** and D. Tompkins, "Performance study of spindle, a web analytics query engine implemented in spark," in *Proceedings of the 2014 IEEE International Conference on Cloud Computing Technology and Science (CloudCom), Big Data Track*, 2014.

[C4] T. Andrew, **B. Amos**, D. Easterling, C. Oguz, W. Baumann, J. Tyson, L. Watson, "Global parameter estimation for a eukaryotic cell cycle model in systems biology," in *2014 Summer*

Simulation Multiconference, Society for Modeling and Simulation International, 2014. [Online]. Available: `http://dl.acm.org/citation.cfm?id=2685662`.

[C5] **B. Amos**, D. Easterling, L. Watson, B. Castle, M. Trosset, W. Thacker, "Fortran 95 implementation of qnstop for global and stochastic optimization," in *2014 Spring Simulation Multiconference, 22nd High Performance Computer Symposium, Society for Modeling and Simulation International*, 2014. [Online]. Available: `http://dl.acm.org/citation.cfm?id=2663525`.

[C6] **B. Amos**, H. Turner, J. White, "Applying machine learning classifiers to dynamic android malware detection at scale," in *IWCMC'13 Security, Trust and Privacy Symposium*, 2013. [Online]. Available: `http://bamos.github.io/data/papers/amos-iwcmc2013.pdf`.

Journal Articles...

[J1] **B. Amos**, D. Easterling, L. Watson, W. Thacker, B. Castle, M. Trosset, "QNSTOP-QuasiNewton Algorithm for Stochastic Optimization," submitted, pre-print available as a tech report. [Online]. Available: `https://vtechworks.lib.vt.edu/bitstream/handle/10919/49672/qnTOMS14.pdf`.

Magazine Articles...

[M1] H. Turner, J. White, **B. Amos**, J. Camelio, C. Williams, R. Parker, "Bad parts: are our manufacturing systems at risk of silent cyber-attacks?" *IEEE Security and Privacy Magazine*, to appear.

Industry Experience

○ Data Scientist Intern, Adobe Research	May 2014–Aug 2014
○ Software Engineer Intern, Snowplow Analytics	Dec 2013–Jan 2014
○ Software Engineer Intern, Qualcomm	May 2013–Aug 2013
○ Software Engineer Intern, Phoenix Integration	May 2012–Aug 2012
○ Network Administrator Intern, Sunapsys	Jan 2011–Aug 2011

Skills

- ○ Most Experience: C/C++, Fortran, Linux, Python, Scala/sbt
- ○ Some Experience: Akka, Android, Bash, Java, LaTeX, Make, *Mathematica*, R
- ○ Least Experience: C#, HTML/CSS/js

Honors & Awards

○ 1st Place Undergraduate Senior Capstone Award, Virginia Tech Computer Science	2014
○ David Heilman Research Award, Virginia Tech Computer Science	2014
– Given to the Computer Science student with the most outstanding research experience.	
○ Senior Scholar Award, Virginia Tech Computer Science	2014
– Given to the senior in Computer Science with the most outstanding academic record.	
○ Honorable Mention, CRA Outstanding Undergraduate Researcher Award	2014
○ Awarded eight undergraduate merit scholarships	2011–2014