# 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

## 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