

# Brandon Amos

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## Research Interests

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Mobile computing, distributed systems, and computer vision.

## Education

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- 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

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- 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

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

## Publications

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### 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

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- 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

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- Most Experience: C/C++, Fortran, Linux, Python, Scala/sbt
- Some Experience: Akka, Android, Bash, Java, L<sup>A</sup>T<sub>E</sub>X, Make, *Mathematica*, R

### Honors & Awards

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- 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