Brandon Amos

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Education

- Ph.D. in Computer Science, Carnegie Mellon University — Aug 2014 – Present
- M.S. in Computer Science, Carnegie Mellon University — Aug 2014 – May 2016
- B.S. in Computer Science, Virginia Tech (3.99/4.00) — Aug 2011 – May 2014
- Northside High School (Roanoke, Virginia) — May 2011

Research Experience

- Carnegie Mellon University, Prof. Zico Kolter — Apr 2016 – Present
  - Machine learning and optimization
- Carnegie Mellon University, Prof. Mahadev Satyanarayanan — Aug 2014 – Apr 2016
  - Machine learning, computer vision, and mobile computing
- Virginia Tech, Prof. Jules White — May 2012 – May 2014
  - Mobile computing, cyber-physical systems, and security
- Virginia Tech, Prof. Layne Watson — Jan 2013 – May 2014
  - Scientific computing, global/stochastic optimization, and bioinformatics
- Virginia Tech, Prof. Binoy Ravindran — Nov 2012 – Mar 2014
  - Heterogeneous compilers

Publications

Conference Proceedings

[C1] H. Zhao, T. Adel, G. Gordon, **B. Amos**, "Collapsed Variational Inference for Sum-Product Networks," in *ICML*, 2016. [Online]. Available: `http://www.cs.cmu.edu/~hzhao1/papers/ICML2016/BL-SPN-main.pdf`.

[C2] **B. Amos**, H. Turner, J. White, "Applying machine learning classifiers to dynamic Android malware detection at scale," in *IWCMC Security, Trust and Privacy Symposium*, 2013. [Online]. Available: `http://bamos.github.io/data/papers/amos-iwcmc2013.pdf`.

Workshop, Symposium, and Short Papers

[W1] N. A. J. Davies, N. Taft, M. Satyanarayanan, S. Clinch, **B. Amos**, "Privacy mediators: helping iot cross the chasm," in *HotMobile*, 2016. [Online]. Available: `http://eprints.lancs.ac.uk/78255/1/44691.pdf`.

[W2] Z. Chen, L. Jiang, W. Hu, K. Ha, **B. Amos**, P. Pillai, A. Hauptmann, M. Satyanarayanan, "Early Implementation Experience with Wearable Cognitive Assistance Applications," in *WearSys*, 2015. [Online]. Available: `http://www.cs.cmu.edu/~satya/docdir/chen-wearsys2015.pdf`.

[W3] 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. [Online]. Available: `http://www.cs.cmu.edu/~satya/docdir/hu-hotmobile2015.pdf`.

[W4] **B. Amos** and D. Tompkins, "Performance study of Spindle, a web analytics query engine implemented in Spark," in *IEEE CloudCom*, 2014. [Online]. Available: `http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=7037709`.

[W5] 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 *Summer Simulation Multiconference, Society for Modeling and Simulation International*, 2014. [Online]. Available: http://dl.acm.org/citation.cfm?id=2685662.

[W6] **B. Amos**, D. Easterling, L. Watson, B. Castle, M. Trosset, W. Thacker, "Fortran 95 implementation of QNSTOP for global and stochastic optimization," in *Spring Simulation Multiconference, High Performance Computer Symposium, Society for Modeling and Simulation International*, 2014. [Online]. Available: http://dl.acm.org/citation.cfm?id=2663525.

Magazine Articles

[M1] M. Satyanarayanan, P. Simoens, Y. Xiao, P. Pillai, Z. Chen, K. Ha, W. Hu, **B. Amos**, "Edge analytics in the internet of things," *IEEE Pervasive Computing*, no. 2, pp. 24–31, 2015. [Online]. Available: https://www.cs.cmu.edu/~satya/docdir/satya-edge2015.pdf.

[M2] H. Turner, J. White, J. A. Camelio, C. Williams, **B. Amos**, R. Parker, "Bad Parts: Are Our Manufacturing Systems at Risk of Silent Cyberattacks?" *Security & Privacy, IEEE*, vol. 13, no. 3, pp. 40–47, 2015. [Online]. Available: http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=7118094.

Tech Reports

[T1] **B. Amos**, B. Ludwiczuk, M. Satyanarayanan, "Openface: A general-purpose face recognition library with mobile applications," Technical Report CMU-CS-16-118, CMU School of Computer Science, Tech. Rep., 2016. [Online]. Available: http://reports-archive.adm.cs.cmu.edu/anon/anon/2016/CMU-CS-16-118.pdf.

[T2] Y. Gao, W. Hu, K. Ha, **B. Amos**, P. Pillai, M. Satyanarayanan, "Are cloudlets necessary?" Technical Report CMU-CS-15-139, CMU School of Computer Science, Tech. Rep., 2015. [Online]. Available: http://reports-archive.adm.cs.cmu.edu/anon/anon/2015/CMU-CS-15-139.pdf.

[T3] K. Ha, Y. Abe, Z. Chen, W. Hu, **B. Amos**, P. Pillai, M. Satyanarayanan, "Adaptive vm handoff across cloudlets," Technical Report CMU-CS-15-113, CMU School of Computer Science, Tech. Rep., 2015. [Online]. Available: http://ra.adm.cs.cmu.edu/anon/2015/CMU-CS-15-113.pdf.

[T4] **B. Amos**, D. Easterling, L. Watson, W. Thacker, B. Castle, M. Trosset, "QNSTOP-QuasiNewton Algorithm for Stochastic Optimization," 2014. [Online]. Available: https://vtechworks.lib.vt.edu/bitstream/handle/10919/49672/qnTOMS14.pdf.

Posters

[P1] **B. Amos** and J. Z. Kolter, "Input-convex deep networks," in *ICLR Workshop*, 2016. [Online]. Available: http://bamos.github.io/data/posters/2016-iclr-icnn.pdf.

[P2] **B. Amos** and M. Satyanarayanan, "Face Recognition for Context Sensitive IoT Systems," in *HotMobile*, 2016. [Online]. Available: http://bamos.github.io/data/posters/2016-hotmobile-facerec.pdf.

Teaching Experience

- Distributed Systems (CMU 15-440/640), TA — S2016
- Software Design and Data Structures (VT CS 2114), TA — S2013

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

Honors & Awards

- NSF Graduate Research Fellowship 2016 – 2019
- 1st Place Undergraduate Senior Capstone Award, Virginia Tech Computer Science 2014
- David Heilman Research Award, Virginia Tech Computer Science 2014
- Senior Scholar Award, Virginia Tech Computer Science 2014
- Honorable Mention, CRA Outstanding Undergraduate Researcher Award 2014
- Awarded eight undergraduate merit scholarships 2011 – 2014

Skills

Languages	Bash, C, C++, CSS, Fortran, Haskell, HTML, Java, JavaScript, LaTeX, Lua, Make, *Mathematica*, Python, R, Scala
Frameworks	Akka, Android SDK/NDK, Caffe, Node.js, NumPy, Torch7, Pandas, SciPy, scikit-learn, Spark, Spray
Systems	Linux, OSX