

PROMOTION RECOMMENDATION  
The University of Michigan  
College of Engineering  
Department of Electrical Engineering and Computer Science

J. Alex Halderman, assistant professor of electrical engineering and computer science, Department of Electrical Engineering and Computer Science, College of Engineering, is recommended for promotion to associate professor of electrical engineering and computer science, with tenure, Department of Electrical Engineering and Computer Science, College of Engineering.

Academic Degrees:

Ph.D. 2009 Princeton University, Computer Science, Princeton, NJ  
M.A. 2005 Princeton University, Computer Science, Princeton, NJ  
A.B. 2003 Princeton University, Computer Science (*summa cum laude*), Princeton, NJ

Professional Record:

2014 – present Director, Center for Computer Security and Society, University of Michigan  
2009 – present Assistant Professor, Department of Electrical Engineering and Computer Science, University of Michigan  
2009 – present Research collaborator, Princeton University Center for Information Technology Policy, Princeton, NJ  
2008 – present Consulting Computer Scientist, Elysium Digital, Cambridge, MA

Summary of Evaluation:

Teaching: Professor Halderman has taught computer and network security courses at both the undergraduate and graduate levels. He created the undergraduate Introduction to Computer Security course (EECS 388) and did a major redesign of the graduate level Computer and Network Security course (EECS 588). At both levels, his teaching evaluations are very high with average scores over 4.7 for both Q1 and Q2. Professor Halderman is active in mentoring graduate students, and he has also served as a faculty advisor to the Michigan Hackers student group. In addition, Professor Halderman created and offered a Coursera MOOC titled “Securing Digital Democracy.” Since 2009, Professor Halderman has been actively involved with undergraduate major projects. Student letters provide many supportive comments on this teaching.

Research: Professor Halderman’s research is in the area of computer security, and it is often influenced by societal concerns; e.g. security of electronic voting systems, mechanisms to prevent government censorship. The societal impact of his work has brought him attention from various media including CNN, NY Times, and NPR, among others. His publication record is very strong. He publishes in the most prestigious venues in his research area. His papers have received three best paper awards and one best student paper award. Professor Halderman’s research funding includes three grants from NSF, as well as research funding from Google, Microelectronics Advanced Research Corporation (MARCO), and the New America Foundation. He is also attracting funding in the form of competitive fellowships for his students (including one from Google last year) and direct research funding from industry and non-profits.

### Recent and Significant Publications:

- Z. Durumeric, F. Li, J. Kasten, J. Beekman, J. Amann, M. Payer, N. Weaver, D. Adrian, V. Paxson, M. Bailey and J. A. Halderman, "The Matter of Heartbleed," *Proc. 14th ACM Internet Measurement Conference (IMC)*, November 2014. Best Paper Award.
- Z. Durumeric, E. Wustrow and J. A. Halderman, "ZMap: Fast Internet-Wide Scanning and its Security Applications," *Proc. 22nd USENIX Security Symposium*, August 2013.
- N. Heninger, Z. Durumeric, E. Wustrow and J. A. Halderman, "Mining Your Ps and Qs: Detection of Widespread Weak Keys in Network Devices," *Proc. 21st USENIX Security Symposium*, August 2012. Best Paper Award.
- S. Wolchok, E. Wustrow, D. Isabel and J. A. Halderman, "Attacking the Washington, D.C. Internet Voting System," *Proc. 16th Conference on Financial Cryptography and Data Security*, Feb. 2012.
- E. Wustrow, S. Wolchok, I. Goldberg and J. A. Halderman, "Telex: Anticensorship in the Network Infrastructure," *Proc. 20th USENIX Security Symposium*, August 2011.
- S. Wolchok, E. Wustrow, J. A. Halderman, H. Prasad, A. Kankipati, S. Sakhamuri, V. Yagati, and R. Gonggrijp, "Security Analysis of India's Electronic Voting Machines," *Proc. 17th ACM Conf. on Computer and Communications Security*, October 2010.
- S. Wolchok, O. Hofmann, N. Heninger, E. Felten, J.A. Halderman and E. Felten, "Defeating Vanish with Low-Cost Sybil Attacks Against Large DHTs," *Proc. 17th Network and Distributed System Security Symposium*, March 2010.

Service: Professor Halderman's service both internally and externally is notable. Internally, at the department level, he has served as an advisor in the Computer Science and Engineering Division (CSE) undergraduate program office and also as a member of the CSE graduate admissions committee. Externally, Professor Halderman has served on a large number of noteworthy program committees for 12 conferences and 10 workshops. He served as co-chair of a nationally recognized workshop on electronic voting. His external service also includes providing expertise to policymakers (Federal Trade Commission, Secretaries of State, Copyright Office) and raising awareness on electronic voting. In addition, he is on the Board of Advisors for the Verified Voting Foundation and was on the Advisory Council for the Princeton University Department of Computer Science until 2012.

### External Reviewers:

Reviewer A: "Alex is the strongest computer scientist researcher of his generation in examining issues of computer security and censorship...Alex has an unusually creative research style, and his CV is full of papers that are already regarded as classics."

Reviewer B: "Halderman's creativity is something of a legend in the field."

Reviewer C: "Alex is a star, and very well-deserving of these recognitions! Indeed, this letter is perhaps the easiest such letter I've been asked to write in a long time...He is certainly a recognized world expert in the security of voting systems. His selection as program co-chair of the EVT/WOTE 2012 Conference – perhaps the most prestigious conference in the field...attests to his world-wide reputation."

Reviewer D: "He is justifiably a star...He is finding and working on exactly the kinds of problems that a systems security researcher should be seeking, and enjoying successes that are the envy of his peers (to say nothing of those of us more senior)...I have written (and read) many tenure and

promotion letters in my career. If this reads like an unreservedly strong one, that is quite deliberate. His is the stronger, clearest case for which I have had the opportunity to write a letter.”

Reviewer E: “...Alex has a consistent [sic] track record of high-quality and high-impact security research which covers a number of different technologies and applications. He has established himself over the past decade as one of the up-and-coming young stars in the field.”

Reviewer F: “Alex is an absolutely superb candidate...The range of his technical expertise, intellectual depth, and diversity of topics covered all attest to the breadth and depth of his research. He has made important research contributions relating to system security...Alex is a most worthy candidate for tenure.”

Summary of Recommendation: Professor Halderman has established a highly successful record of teaching, scholarly research, and service at the University of Michigan. It is with the support of the College of Engineering Executive Committee that I recommend J. Alex Halderman for promotion to associate professor of electrical engineering and computer science, with tenure, Department of Electrical Engineering and Computer Science, College of Engineering.



David C. Munson, Jr.

Robert J. Vlasic Dean of Engineering  
College of Engineering

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