

Richard T. Carback III

PhD Student of Computer Science, Curriculum Vitae

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Last Updated July 10th, 2008

RESEARCH INTERESTS

Computer Security. Primary interest in voting systems. Other interests include privacy enhancing technologies, virtual systems security, cryptology, discrete algorithms, and information assurance.

EDUCATION

May 2005 B.S. *cum laude* in Computer Science, University of Maryland, Baltimore County.

May 2008 M.S. *summa cum laude* in Computer Science, University of Maryland, Baltimore County.

EMPLOYMENT HISTORY

2005–Present **Teaching Assistant**

Dept. of Computer Science and Electrical Engineering, University of Maryland, Baltimore County

Taught lab sections, graded, and assisted students with assignments and projects.

Summer 2006 and 2007 **Research Assistant**

Dept. of Computer Science and Electrical Engineering, University of Maryland, Baltimore County

Part of the Cyber Defense Lab (CDL). Updated, designed, and created Cyber Defense Exercises (CDXs) for use in courses at UMBC.

1999–2005 **Software Engineer**

L-3 Communications Government Services, Inc. Chantilly, VA

Formally known as EER Systems, located in Seabrook, MD. Worked summer and winter during school breaks.

- Maintenance Mentoring System (MMS): Contributed to application that automated creation of an interactive set of HTML documents used on a portable computer to service engines and other complicated equipment. In a test, the use of the MMS saved 62 minutes out of a total 682 minutes for Stage I F-402-408B engine assembly. See: <http://ctma.ncms.org/Completed%20Projects/MMSII.htm>
- Tactical Automated Security System (TASS) and Integrated Base Defense Security System (IBDSS) Contractor Logistics Support Group: Inventory management database, bar code printing/reading system, external access for Government and Military clients via a secure website, internal access in Java and VB application clients. See: <http://l-3gsi.com/>

2002–2005 **System Administrator**

The Retriever Weekly Student Newspaper, University of Maryland Baltimore County, MD

Along with an assistant and webmaster, managed workstation, door code access, web/e-mail/storage server, fax, and printer systems. See: <http://retrieverweekly.com/>

TEACHING EXPERIENCE

- Fall 2006. Computer Science I for Majors - Taught two hour weekly lab (programming) sections on basics of computer science. See: <http://www.cs.umbc.edu/courses/undergraduate/201/fall06/index.shtml>
- Fall 2005. Computer Science II for Majors - Taught six hour weekly lab (programming) sections. Topics included aggregation, operator overloading, dynamic memory, inheritance, polymorphism, exceptions, and templates. See: <http://www.csee.umbc.edu/courses/undergraduate/202/fall05/>
- Spring 2006, 2008 and Fall 2007. Principles of Operating Systems - Grading and course project assistance. See: <http://www.cs.umbc.edu/courses/undergraduate/421/spring06/krishna/> and <http://www.csee.umbc.edu/~kalpakis/Courses/421-fa07/cmssc421.html>
- Fall 2006. Information Assurance - Grading and course project assistance.
- Spring 2007. Introduction to Network Security - Grader. See: <http://cisa.umbc.edu/courses/cmssc/487/>
- Spring 2007. Research Skills for Computer Science - Grader and writing assistance. See: <http://www.csee.umbc.edu/~krishna/cs601/>

PUBLICATIONS

- Richard T. Carback, Jeremy Clark, Aleks Essex, and Stefan Popoveniuc. "On the Independent Verification of a Punchscan Election". 2007. In Online Proceedings of the 2007 University Voting Systems Competition (VoComp 2007).
- Aleks Essex, Jeremy Clark, Richard Carback, Jeremy Clark, Aleks Essex, and Stefan Popoveniuc. "The Punchscan Voting System: VoComp Submission Document". 2007. In Online Proceedings of the 2007 University Voting Systems Competition (VoComp 2007).
- Richard Carback, Stefan Popoveniuc, Alan T. Sherman, and David Chaum. "Punchscan with Independent Ballot Sheets: Simplifying Ballot Printing and Distribution with Independently Selected Ballot Halves". 2007, In Preproceedings of the 2007 IAVoSS Workshop on Trustworthy Elections (WOTE 2007).
- Aleks Essex, Jeremy Clark, Richard Carback, and Stefan Popoveniuc. "Punchscan in Practice: An E2E Election Case Study". 2007, In Preproceedings of the 2007 IAVoSS Workshop on Trustworthy Elections (WOTE 2007).
- Kevin Fisher, Richard Carback, and Alan T. Sherman. "Punchscan: Introduction and System Definition of a High-Integrity Election System". 2006, In Preproceedings of the 2006 IAVoSS Workshop on Trustworthy Elections (WOTE 2006).

Manuscripts and updated list available at <http://carback.us/rick/research.php>

TALKS

- Richard Carback. "Scantegrity II: Vote Confirmation and Digital Audit Trails." Takoma Park Maryland Board of Elections. April 2008.
- Aleks Essex, Richard Carback. "Scantegrity II: Vote confirmation for Optical Scan Machines." Ottawa Canadian Linux User's Group Meeting. April 2008.
- Richard Carback. "Cyber Defense Lab and Electronic Voting Security." UMBC First Year Seminar Course for Computer Science Students. March 2008.
- David Chaum, Aleks Essex, Jeremy Clark, Richard Carback, Stefan Popoveniuc. "Scantegrity II: Vote Confirmation for OpScan." ITIF Forum: The Future of Voting. March 2008.
- Richard Carback. "Voting Security." UMBC First Year Seminar Course for Computer Science Students. February 2007.
- Stefan Popoveniuc and Richard T. Carback. "Punchscan". Harvard University's Privacy and Security Lunch Seminar. November 2006.
- Richard T. Carback, David Chaum, Jeremy Clark, Aleks Essex, Kevin Fisher, Ben Hosp, Stefan Popoveniuc, Jeremy Robin. "Punchscan and VoComp". Rump Session of CRYPTO 2006.

POSTERS

- Richard Carback. "Creating and Sharing a Secret from Passphrases Without a Trusted Dealer." UMBC CSEE Research Day. May 2007.
- Richard Carback, Kevin Fisher, and Sandi Lwin. "The PunchScan Voting System: Refinement and System Design." UMBC CSEE Research Day. May 2006.

PROFESSIONAL SERVICE

- Reviewer. Cryptologia, 2007.

HONORS

- UMBC Outstanding Student Alumni Award
- VoComp 2007 1st place prize winner for Punchscan voting system. See: <http://vocomp.org/>

AFFILIATIONS

- Voteegrity Research Group
- UMBC Cyber Defense Lab
- UMBC Center for Information Security and Assurance
- Triangle Fraternity of UMBC