

Adam J. O'Donnell

PhD Candidate

Department of Electrical and Computer Engineering, Drexel University

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Highlights:

- Awarded NSF Graduate Research Fellowship, 2002 to 2005
- Coauthored Hacker's Challenge 2
- Contributing author to Building Open Source Network Security Tools and Hacker's Challenge

Education:

- MSEE in Computer Engineering, March 2004
Drexel University, Philadelphia, PA, 19104
4.00 GPA
- BSEE in Electrical Engineering, June 2001
Drexel University, Philadelphia, PA 19104
Graduated Summa Cum Laude, 3.95 GPA

Work Experience:

Drexel University; 6/01 – Present

Graduate Researcher

- Researching field of computer networks and computer security
- Presented research on non-cooperative congestion control scheme at IEEE ICC 2002
- Presented research on network growth models at DIMACS Conference on Internet and WWW Measurement, Mapping, and Modeling
- Co-authored Hacker's Challenge 2
- Technical editor and contributor to Building Open Source Network Security Tools

Drexel University; 9/02 – Present

Teaching Assistant

- Handled grading and tutoring for Computer Networks senior sequence
- Presented lectures on Global Internet Architecture, Secure Programming, and Overlay Network Architecture
- Managed approximately 100 students for the ECE Senior Design project
- Attended committee meetings for Senior Design program

Camisade, LLC; 9/01 – 3/02

Research Scientist

- Developed technology transfer programs to migrate research from academia to commercial products
- Designed new 802.11 auditing techniques and instituted them for several large clients

Guardent, Inc; 7/00 – 6/01

Research Scientist

- Led Wireless Security research effort
- Presented paper on Pager Security at Future of Information Security Conference, October 12th in San Francisco
- Performed evaluations of 802.11 installations for several large contracts
- Authored “Maggie’s Moment”, chapter in Hacker’s Challenge

Knight/Ridder MediaStream; 9/99 – 4/00

Software Developer

- Designed and performed recovery operation to rescue information from failing legacy database.
- Developed Perl, Java, and ASP code to connect e-commerce site to a backend database of AP and Reuters photographs and graphic content.

Lucent Technologies; 9/97 – 3/98, 9/98 – 3/99

Technical Associate

- Designed, optimized, and tested high linearity RF amplifiers for PCS band TDMA microcell base station.
- Applied for and received a patent for a portion of the amplifier dealing with high linearity phase shifters.
- Designed PWB artwork and optimized associated printed circuit elements
- Resolved various manufacturing issues with large volume production of circuit pack.
- Automated laboratory equipment using LabVIEW, reduced circuit pack test time by a factor of 10.

Published Works and Talks:

Books

- M. Schiffman, A. J. O'Donnell, B. Pennington, and D. Pollino. Hacker's Challenge 2. McGraw-Hill Osborne Media, 2002.

Book Chapters

- A. J. O'Donnell. Attack and Penetration Techniques: Buffer Overflow Vulnerabilities. In M. Schiffman, Building Open Source Network Security Tools, pages 260-267. Wiley, 2002.

- A. J. O'Donnell. Maggie's Moment. In M. Schiffman, editor, Hacker's Challenge. McGraw-Hill Professional Publishing, 2001.

Refereed Archival Publications

- A. J. O'Donnell and H. Sethu. *Congestion Control, Differentiated Services, and Efficient Capacity Management Through a Novel Pricing Strategy*. Computer Communications, pages 1457-1469, August 2003.

Conference/Workshop Papers

- A. J. O'Donnell and H. Sethu. *On Achieving Software Diversity for Improved Network Security using Distributed Coloring Algorithms*. In Proceedings of the 11th ACM conference on Computer and Communications Security, pages 121-131, Washington DC, USA October 2004.
- A. J. O'Donnell and H. Sethu. *A Novel, Practical Pricing Strategy for Congestion Control and Differentiated Services*. In Proceedings of the IEEE International Conference on Communications, volume 2, pages 986-990, New York, NY, April-May 2002.
- A. J. O'Donnell. *On the Influence of Phased Growth of the Internet on Power Laws in the Topology*. DIMACS Workshop on Internet and WWW Measurement, Mapping, and Modeling, February 2002.
- R. Carr, A. Gregorowicz, A. O'Donnell, and R. Quinn. *Enhancement of Freshman Engineering Laboratory through Remote Web-Based Experiments*. In Proceedings of the ASEE Annual Conference, Seattle, WA, June 2001.

Technical Reports and other Publications

- A. O'Donnell. *Insecurities in One-Way Paging Systems*. SecurityFocus Online Guest Feature, 2000.

Patents

- S. Hamparian, M. G. Kossor, and A. J. O'Donnell. *Phase Shifter Circuit with High Linearity*. Patent #US05990761, November 1999.

Invited Talks

- “On Achieving Software Diversity for Improved Network Security using Distributed Coloring Algorithms”, University of Pennsylvania Security Seminar, November 30th, 2004
- “On Achieving Software Diversity for Improved Network Security using Distributed Coloring Algorithms”, Drexel University CS Department Seminar Series, October 20th, 2004

Service:

Teaching

- Lecture; Overlay Networks, Addressed to ECE-433, Network Programming, Spring 2004

- Lecture; Security Related Programming Flaws and Attacks, Addressed to ECE-433, Network Programming, Spring 2004
- Lecture; Global Internet Architecture, Addressed to ECE-432, Internet Architecture, Winter 2004
- Lecture; Distributed Denial of Service Attacks, History and Implementation. Addressed to ECE-633, Advanced Topics in Computer Networks, Spring 2003
- Teaching Assistant; Computer Networks, Electrical and Computer Engineering, Fall 2003 to Spring 2004
- Teaching Assistant; Senior Design, Electrical and Computer Engineering, Fall 2002 to Spring 2003

Professional Affiliations

- Member; IEEE, 1996-present.
- Member; ACM, 2001-present.

Manuscript Editing/Reviewing

- Technical Reviewer; T. Howlett. Open Source Security Tools, Addison-Wesley Professional, 2004
- Technical Editor; M. Schiffman. Building Open Source Network Security Tools, Wiley 2002

Awards

- NSF Graduate Research Fellowship, 2002 to 2005
- College of Engineering Dean's Fellowship, 2002 to 2005
- TA Excellence Award, 2004
- Koerner Family Fellowship, 2003
- Cisco Systems Information Assurance Scholarship, 2003
- Department of Defense National Defense Science and Engineering Fellowship, 2002 (declined)
- Colehower Fellowship, 2001
- Senior Design Unisys Award for Computer Engineering, 2001
- Engineering Undergraduate Research Award, 2001
- Anthony J. Drexel Scholarship, 1996 to 2001
- Allen Rothwarf Outstanding Undergraduate Student Award, 2000
- Dorothy & Frank Hutchinson Scholarship, 1999
- Alvin Wene Scholarship, 1999
- Sigma Xi Engineering Undergraduate Research Award, 1998
- 1st Place Anderson Consulting Web Challenge, 1997