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## Languages and Systems

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I am expert in Perl and Bourne Shell. I know the C programming language well. I've studied perl 6 and rust. I've designed and negotiated security policies, built and maintained firewalls and IDS systems, and performed security administration. I support Red Hat Linux regularly, and work occasionally with Solaris. My focus is Unix system administration automation and security.

## Papers and Projects

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I've published a paper on auditing firewalls, available from <URL:<http://bet.github.io/firewall-audit-paper/p5.htm>>. I've written and maintained several open source projects, including a high-performance POP-before-SMTP authentication daemon for use with Postfix, and a custom Linux distribution based on embedded Linux.

I've written an overview of cryptography,  
<URL:<http://bet.github.io/crypto/index.html>>

## Experience

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TD Securities  
2016-2018

New York, NY

I helped in adding DMARC, DKIM, and SPF records for email security. I helped document and simplify our administration procedures for our multi-factor authentication servers, and enable their use, via RADIUS, for a password archive; and created operations documentation for upgrading them. I helped evaluate Content Distribution Network and Web Application firewall vendors. I wrote and deployed programs to automatically transfer user account lists, with roles, from two different vendor systems to an in-house account re-authorization system.

CNBC  
2013-2014

Englewood Cliffs, NJ

I built an IDS sensor, did post-incident forensic analysis, and created our password policy. I built and deployed a tool for forensic session logging, as a companion to the IDS sensor. I designed our configuration collection and tracking system.

Goldman Sachs  
2008-2010

New York, NY

I helped automate system administration of Linux and Solaris servers, including automated periodic inventory of systems and batch system modification.

Morgan Stanley  
2003-2008

New York, NY

I was a Unix systems engineer at Morgan Stanley. I created and supported their secure Linux build, for stand alone and security-sensitive applications. I maintained and developed their

internal DNS infrastructure. I designed the DNS architecture and servers for a new, highly scalable internal build based on CERN's Quattor.

Société Générale  
2002-2003

New York, NY

I was a security analyst at Société Générale, in their Information Security and Governance department. I designed and implemented their Perimeter Intrusion Detection System; I created several utilization reporting systems, importing logs of various sorts --- web utilization, NT and Unix login activity --- and web-based query/reporting tools for viewing the data.

Morgan Stanley  
2001-2002

New York, NY

I was a security analyst at Morgan Stanley, in their Information Technology Security Engineering department. I designed and implemented their virus-scanning bastion email server. I developed and implemented a remote computing solution for ssh access. I supported many groups, reviewing designs and auditing code, helping ensure that new deployments introduced no security problems.

Oven Digital  
1999-2000

New York, NY

I was the senior security and systems analyst at Oven Digital.

I wrote their security policy, and designed and implemented their firewalls. I set up their email server and DNS infrastructure, and developed the email content filtering that trapped out any email worms before they are delivered to their users. I provided the architectural design and implementation for scalable, high-performance, high-security, high-availability web server farms.

Lehman Brothers, Inc.  
1998-1999

Jersey City, NJ

I was a Senior Systems Administrator and Systems Analyst at Lehman Brothers.

I developed a full-text index search engine companion to the in-house trouble ticket database; I developed a data mining application for systems management, that collected information both from direct probes of systems, and from various administrative tables in management databases, and allowed report generation queries through a web interface against the collected data. This was instrumental in planning and managing upgrades.

Fuji Capital Markets Corp.  
1995-1998

New York, NY

I was a Senior Systems Analyst at Fuji Capital Markets.

I worked as a Systems Administrator, with a team that supported 200 users. I was also the security administrator, charged with internal and external computer systems security planning, maintenance, testing, and reporting. I designed the Jumpstart configuration for Solaris, along with the packaging standard and automounter architecture we used for installing and accessing

software.

Salomon Brothers, Inc.  
1991-1995

New York, NY

I worked as a Senior Systems Analyst for SBI.

I set up an in-house WWW server, designed our web documents, and put the Perl 5 manual up for access via WWW, with an automatically-maintained index of all the documentation for libraries.

I headed up the design and implementation of facilities for automating the installation, restoration (e.g. after disk failure), and maintenance of several hundred workstations. I produced a software suite for automated network load of SunOS 4.x, much in the style of Jumpstart. The group I worked with provided second-tier support for some seventy System Administrators, who were in turn responsible for machines serving roughly a thousand end-users, including traders, researchers, and application developers.

I brought in, built, and supported substantial free software packages, including TeX and LATEX, Xfig and Transfig, X11R5, Perl, TCL/Tk, and all the GNU software. I wrote software and performed delivery testing in support of deploying software into production. I dramatically enhanced the local software distribution process, both by writing software and by establishing standards for packaging and delivery.

I tested and packaged many security-related facilities, including net-distributed security challenge programs like Crack, COPS, and SATAN, as well as security fixes like Sun's ypserv patch and new versions of sendmail.

Radiology Department, Duke University Medical Center  
1988-1991

Durham, NC

My responsibilities included system administration, user support, system programming, and application programming on a network of Sun workstations and other systems, used for medical image processing. I completed two substantial tasks connecting non-standard peripherals to our system, requiring system programming. I performed security auditing, and improved the network's security substantially.

Computation Center, Duke University  
1984-1988

Durham, NC

I supported System V UNIX on AT&T 3B5, IBM OS/MVS and VM on various mainframes, and MS-DOS on PCs. In this job I answered questions from users all over the University, performed minor contract programming tasks, and served as system administrator for the UNIX facility offered by the Computation Center.

## Education

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Department of Electrical Engineering, School of Engineering, Durham, NC  
1980-1984  
Duke University

I earned a Bachelor of Science in Electrical Engineering, Magna Cum Laude, and completed departmental requirements for a Bachelor

of Science in Computer Science.