

Roland Dowdeswell

*Address elided for online version
Phone elided for online version*

Positions

Managing Partner, Metzger, Dowdeswell & Co., LLC 3/03–present
Started company specializing in systems and security consulting.

Independent Consultant 2/02–2/03
Consulted for Bluewave Networks, Inc. Provided and supported embedded version of NetBSD for use in network analysis.

Scientist, Founder, Ponte, Inc. 4/98–1/02
Co-founded company. Designed and implemented substantial percentage of all software produced during my tenure, including distributed network and security management software, an automated packet filter generator and an end-user firewall. Co-authored patent. Served as a mentor to engineers. Setup the initial source code repository, bug tracking system and build system.

SQA Engineer (Contract), Network Associates 10/97–4/98
Wrote programs in C to automate testing of firewalls and virus scanners on web proxies and mail gateways.

Research Assistant, Indiana University Department of Mathematics 1/96–5/96
Wrote and maintained the Mathematics Department's web pages.

Software Engineering Intern, Motorola 5/94–8/94
Wrote a C++ wrapper that provided an object oriented interface to a proprietary networking stack.

Software Engineering Intern, Motorola 5/92–8/92
Wrote an X/OpenLook application to conduct surveys of Engineer conformance to SE Guidelines. Rewrote default system profiles and login scripts. Wrote a script in Korn Shell to create user accounts and populate their home directories in a distributed environment. Learned UNIX.

Education

10/96–6/97 University of Cambridge, graduate work in Mathematics
1/96–5/96 Indiana University, graduate work in Mathematics
1/91–12/95 Indiana University, Bachelor of Science in Mathematics

Open Source Projects and Positions

Developer, The NetBSD Project

10/98–present

Wrote a cryptographic pseudo-disk driver (cgd) which allows for cryptographic file systems and cryptographic swap. Wrote an audio device driver (aria). Accelerated support for DECchip 21030 (TGA) in the kernel and support for TGA2 (video cards). Accelerated support for DECchip 21030 and TGA2 in the X server. Helped the Security Officer evaluate and respond to CERT Advisories. Various bug fixes and porting of 3rd party software in the pkgsrc system.

Selected Publications and Patents

- [1] Roland C. Dowdeswell and John Ioannidis. The CryptoGraphic Disk Driver. In *Proceedings of the Annual USENIX Technical Conference*, June 2003.
- [2] Mark E. Epstein, Roland C. Dowdeswell, Michael F. Cuddy, and C. Erik Berls. A Method and Apparatus for Managing a Network. US Patent Application, 2000.
- [3] William P. Orrick, Bruce Solomon, Roland Dowdeswell, and Warren D. Smith. New lower bounds for the maximal determinant problem.

Technical Skill Summary

Programming Background in theoretical Computer Science and Mathematics. Good understanding of algorithms, design methodology, optimization and debugging in both imperative and declarative languages.

Unix Extensive experience with UNIX systems from low level kernel programming on up. Experience with both BSD and System V variants. Recent experience with NetBSD, Solaris and Linux. Some experience with SunOS 4.1.x, Ultrix/Tru64/DU, HP-UX, A/UX, SCO, IRIX and AIX.

Networking Extensive knowledge of IPv4 and good knowledge of IPv6, including configuring networks, writing networked applications in many languages and some knowledge of the kernel's IP stack. Has debugged some problems in the networking stack, mostly in NetBSD's packet filter.

Languages Many languages, a few highlights: C, C++, sh, awk, yacc, TCL, Perl and Haskell.

Security Kerberos 5, GSS-API, PKI, OpenSSL, IPsec, IKE, Firewalls. Comfortable with designing secure software, understands cryptography and can design cryptographic protocols. Some understanding of cryptanalysis. Has fixed bugs in Heimdal (a Kerberos 5 and GSS-API implementation).