

# MICHAEL A. HALCROW

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MIKE@HALCROW.US

## EDUCATION

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Jan 03 – Apr 03; Brigham Young University; PROVO, UT  
*Department of Computer Science*

- **Computer Science Department Master's Program** with emphasis in **Network Security**
- Current GPA: **4.00/4.00**

Jan 00 – Dec 02; Brigham Young University; PROVO, UT  
*Department of Electrical and Computer Engineering*

- **B.S. in Computer Engineering, December 2002**
- Cumulative GPA: **3.75/4.00** (Dean's List, Winter Semester 2000)

Sept 96 – Apr 97; University of California at Santa Barbara; SANTA BARBARA, CA  
*Department of Computer Science*

- Dean's Honors, Fall and Winter Quarters

## WORK EXPERIENCE

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May 03 – Present; IBM Linux Technology Center (LTC); AUSTIN, TX  
*Linux Security Software Engineer. Team Supervisor: Danna Rother.*

- Technical lead for an initiative to design and develop a **Linux filesystem encryption** layer.
- **Common Criteria (CC) EAL levels 3 and 4 certification** for SuSE Enterprise Linux Server.
  - Verification of **OpenSSL** cryptographic operations, system call auditing, and low-level design documentation of the **Linux kernel cryptographic routines** and security enforcement applications.
- Implemented **BSD Secure Levels** as a **Linux Security Module (LSM)**.

Jan 02 – May 03; BYU CS Dept. Internet Security Research Lab (ISRL); PROVO, UT  
*Research Assistant. Advisor: Dr. Kent Seamons.*

- Assisted in the development of a **credential disclosure policy language** (RTML).
- Integrated **XML Security** into an RTML tool set using the Apache XML Security Suite under contract with Network Associates Inc. (NAI) labs (*contact: Dr. William Winsborough*).
- Supported research in **Trust Negotiation** via intelligent exchange of policies and credentials.
- Involved in **buffer overflow** threat analysis and defense.

May 00 – Sept 01; BYU EE Dept. Configurable Computing Lab (CCL); PROVO, UT  
*Research and Teaching Assistant. Advisor: Dr. Michael Wirthlin.*

- Involved in the development of a Java-based hardware description language and CAD tool called **JHDL** (<http://www.jhdl.org>). Developed arithmetic logic circuits. Engineered a **design rule checking (DRC) system** for digital logic circuits in JHDL.

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## PROFESSIONAL AND RESEARCH EXPERIENCE

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- Expertise in the **GNU/Linux** operating system; proficiency in Windows environments.
- Operating system and network **security**, cryptography, authentication, authorization, PAM, SE Linux, and **Linux Security Modules (LSM)**. Special interest in **filesystem security and encryption**.
- **Linux** on **IBM S/390 (zSeries) mainframes**, xSeries, and pSeries.
- **Real-time Operating Systems (RTOS)** and embedded system design; **FPGA CAD** tools.
- **Communications** and **networking** (wireless networks, **network security**, SSL/TLS, etc.).
- Experience with **C**, **C++**, **x86 Assembly**, **kernel development**, **XML**, Java, Perl, Ruby, Objective Caml, TCP/IP packet analysis, wireless networking (Bluetooth/802.11), database design and implementation, SQL, and the S/390 environment.

## AWARDS, RECOGNITIONS, AND PUBLICATIONS

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- Currently on the **IBM Technical Resource (TR)** track.
- Speaker at the **2004 Ottawa Linux Symposium**, discussing **Linux filesystem security** (see [http://www.linuxsymposium.org/2004/view\\_abstract.php?content\\_key=55](http://www.linuxsymposium.org/2004/view_abstract.php?content_key=55)). Publication in the symposium's proceedings is entitled "Demands, Solutions, and Improvements for Linux Filesystem Security."
- Author of **Sys Admin Magazine September 2004 Feature Article**, "Using the BSD Secure Levels LSM".
- Presenter at the 2004 **IBM Academy** Conference on Proactive Problem Prediction, Avoidance, and Diagnosis. Topic: Security Risk Quantification and Policy Generation.
- Speaker at the 2004 IBM Privacy and Security Workshop. Topic: BSD Secure Levels LSM.
- Headed a team of four students in developing a **Bluetooth** wireless financial processing system. The team was selected as one of the top ten teams in the international **IEEE Computer Society International Design Competition** and was invited to attend the world finals in Washington, D.C. (see <http://www.computer.org/pr/Jun02/CSIDC2002.htm>).
- Inventor on seven IBM patents since November 2003.

## COMMUNITY INVOLVEMENT

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- Volunteered as the industrial mentor for a team of students in Dr. Almstrom's CS373 class (Feb 2004 – May 2004).
- Commit at least four hours a week to service for local religious institution, providing assistance by managing finances, keeping membership records, and teaching classes.
- Make regular contributions to various Free/Open Source Software projects in free time (e.g., cdk\_db, filmwatch, glbattlepong, ldsoss, and mplayer).