

Edwin A. Hernandez-Mondragon, Ph.D.

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Education

Ph.D, University of Florida, Gainesville, FL, Major: Computer Engineering, Research areas: Mobile Computing, Wireless networks, Handoff Optimization, and Adaptable Network Protocols, Linear Prediction, Network Emulation
Dissertation: *An Adaptive Networking Protocol for Rapid Mobility Environments* Advisor: Dr. Sumi Helal, August 2002

M.Sc. University of Florida, Gainesville, FL. Major: Electrical and Computer Engineering
Research areas: Computer Networks and Intelligent and Information Systems, Thesis: *Adaptive Sampling for Network Management* Advisor: Dr. Alan D. George December 1999

B.Sc. Costa Rica Institute of Technology, Costa Rica, Major: Electronics Engineering
Thesis: *Monitoring system for a packet data network*, RACSAPAQ Advisor: Dipl-Ing. Luis P. Mendez July 1995

Industry Experience

Principal Staff Software Engineer, October'07 – present. Motorola - Mobile Devices, Plantation, FL. Google Android integration of several device drivers, demo with GPS and Google Maps. . Implementation of an innovative user experiences using SVG-based UIs (JSR-226) and declarative UIs.

Senior Staff Engineer: November'03-October'07. **Technical lead for Dual Mode Java.**
Carrier: Sprint/Nextel/Boost Mobile. Projects: Motorola ic502, ic402, RAZR v9m, SLVR, ic902 and RAZR2 Virtual Machine implementations. Platform: Qualcomm CDMA/BREW environments.

Lead a group of 10-15 engineers in the US and overseas for about 2 years, implemented several features including JSR-179: Location-based APIs following Sprint's specification on location while supporting developer's such as Telenav's, Weather Channel, MobiTV, and many other location-based services and APIs. **Nominated as Motorola CDMA GPS Champion.**

Similar work on multiple others JSRs including WMA (Push registry), JSR-82: BREW/CDMA Bluetooth Extensions, JSR-226 (SVG), JSR-75. Each JSR was taking in many cases from design, development, maintenance, and certification via TCK/PCK.

Extensive multimedia support on RTSP for Sprint Movies, Sprint TV, and similar applications running on our Virtual Machine. Interacted with other third party vendors: SEVEN, Teleca, Esmertec, Qualcomm, SUN, Boost Mobile, etc.

Carrier: Nextel Projects: I930 and i920, iDEN single-mode devices..

Porting and implementation of multiple JSRs including JSR-177, AMS lifecycle, iDEN proprietary APIs, MIDI implementation, LCDUI, and other components for Windows Smartphone platform,

MERI VM (Motorola proprietary VM). Experience with many iDEN PTT devices and debugging tools, iDEN VM uses ROS a proprietary operating system and synergy UI.

Member of Patent Review Board and Intellectual Property evaluation (2003-present)

Technical Program Manager, Microsoft Corporation, Windows Networking, Redmond, WA, August'02-September'03.

Designed and implemented Bluetooth Personal Area Networking User Interfaces and Drivers in use Windows XP/Vista (LongHorn) running IPv4/IPv6 Support. The same implementation was ported over Windows CE as part of Windows Mobile Environments.

Entrepreneur, COMPUNET, Tegucigalpa, Honduras, April '97-present

Chief Engineer and owner, implemented Java Servlets for multiple applications.

- Billing and user control, JSP interfaces to TACACS+/RADIUS servlets
- Customized several JSP projects to be used on e-mail clients, reporting, and many other tasks.

Network Engineer, Central American Telecommunication Commission (COMTELCA), Tegucigalpa, Honduras, August'95-May '97. Networking, Videoconference systems (VTEL and H.323), software development for telecommunications and traffic management.

Consultant, United Nations Development Program (UNDP), Tegucigalpa, Honduras, November'96-May '97 Network security and IT consulting

Patents Submitted and Issued

- E. Hernandez, A. Ayyagari, et al. "Method and system for managing power consumption of a network interface module in a wireless computing device," Microsoft Corporation, 2001
- E. Hernandez, A. Helal, RAMON, "Rapid Mobility Network Emulator Method and System," University of Florida. **Issued Pat. 7,231,330**
- E. Hernandez, A. Helal, "System, Apparatus, and Method for Proactive Allocation of Wireless Communication Resources," University of Florida, submitted 2002
- S. Poursabahian, E. Hernandez, et al, "Bluetooth PAN Driver," Microsoft Corporation, **Issued Pat: 7,269,388**
- A. Krantz, E. Hernandez, et al "Rules-based Network Selection Across Multiple Media," Microsoft Corporation, submitted 2004
- V. Bhanu, E. Hernandez, et al, "Smart Scan for Bluetooth PAN Services," Microsoft Corporation.
- E. Hernandez, K. Ardizzone. "Thumb-based User Interface for Camera Phones," Motorola, Inc, submitted 2005
- E. Hernandez, "Secure USB Drive," Motorola Inc, submitted 2005
- E. Hernandez, J. Tracy "Magnetic Connector", Motorola Inc, **Issued Pat: 7,331,793**

Publications

- E. Hernandez, M. Chideste, and A. George, "Adaptive sampling for network management," Journal of Networks and System Management (JNSM), Vol. 9, No. 4, Dec 2001.
- E. Hernandez, A. Helal, "Predictive Mobile IP for Rapid Mobility," IEEE Conf. WLN 2004, Tampa, FL.
- E. Hernandez, A. Helal "RAMON: An emulation approach," IEEE Conf. LCN 2002, Tampa, FL
- E. Hernandez, A. Helal, "Examining Mobile-IP Performance in Rapidly Mobile Environments: The Case of a Commuter Train," IEEE Conf. LCN 2001, Tampa, FL, Nov 14-16, 2001.
- S. Shah, E. Hernandez, A. Helal, "CAD-HOC: A CAD Like Tool For Generating Mobility Benchmarks In Ad-Hoc Networks," SAINT 2002, Japan, January 2002.
- E. Hernandez "An adaptive protocol for rapid mobile environments," Ph.D. Dissertation, University of Florida, August 2002.
- E. Hernandez. "Adaptive sampling for network management," M.Sc. Thesis, University of Florida, Dec 1999.
- E. Hernandez, Y. Lee. "Monitoring system of a packet data network," B.Sc. Thesis. ITCR, report, July 1995.

Research Experience

Graduate Research Assistant, University of Florida, Gainesville, FL, January 2000-August 2002. Investigated the effects of handoff and network mobility at different vehicular speeds on Mobile IP, Predictive models, developed RAMON, Rapid Mobile Network Emulator.

Graduate Research Assistant, University of Florida, Gainesville, FL

September 1997-December 1999. Investigated Network Management and Intelligent systems using Fuzzy Logic and SNMP (Simple Network Management Protocol)

Program Manager Intern, Microsoft Corporation, Redmond, WA May'01-September 2001.

Investigated self-similarity in wireless networks, and power management algorithms

Network Engineer: Radiografica Costarricense, R&D, Costa Rica. January 1995-July 1995.

Developed a microcontroller-based software/hardware monitoring system for X.25 data networks

Teaching Experience

Graduate Teaching Assistant, University of Florida, January 2000-August 2002 Mobile

Computing a level-6000 graduate class (2 terms), Software Engineering (2 terms), Introduction to CIS/Java (2 terms), and Programming C/C++.

- Taught J2SE for undergraduate students many concepts from threads to recursive functions, inheritance, and others.
- Mobile Computing TA, taught J2ME and supported the first and second Killer App Competition at the University of Florida sponsored by Motorola. Prepare students to learn initial J2ME versions and supported development on i88 devices.

Instructor, Central American Telecommunication Commission, Jun'96-Apr'97 Operating Systems/Linux, Introduction to C++, and Internetworking (All over Videoconference)

Seminars and Workshops Attended

- Embedded Linux, March 2007
- WiMAX essentials, August 2007
- Architectural Practices, CMU Software Institute, October 2007
- Several .NET and C#, ASP.NET seminars Fort Lauderdale, FL, (2005-2008)
- VoIP Technologies at ITExpo, Fort Lauderdale, FL 2005 and 2006
- Research grants and SBIR training, Florida Atlantic University, Boca Raton, November 2007
- Academic conferences UBICOMP 2003, WLN 2003-2006, IEEE SOUTHEAST CONF 2005

Professional

TPC/Reviewer: IEEE Broadnets 2008, IEEE Wireless Networks Magazine, IEEE Transactions on Mobile Computing, IEEE WLN 2005-2007, IEEE GLOBECOM 2005, IEEE SOUTHEAST CONFERENCE 2005

Editorial Board International Journal of Network Management (2007-present)

Tutorials: IEEE SOUTHEAST CONF 2005. Windows Cryptographic API, A Session Keys Paradigm

Honors and Awards

- Fulbright-Scholar 1997-1999
- Ranked 1st in undergraduate studies, July 1995.
- Mention of honor in the Honduran National Science Contest, May 1997.
- Four consecutive academic scholarships undergraduate work at ITCR, 91-95.
- HCS Lab student award, spring 1999.
- *In March 2001, as a co-founder of E-melodies, runner-up during the 2001 UF Business Plan Competition at the University of Florida and winner of the 2002 UF Business Plan Competition in Information Technology.*

Service and Community

- Hispanic Graduate Student Association, Finance chair, 2001-2002;
- Hurricane Mitch Volunteer, Gainesville, FL. October 1998;
- ACM, IEEE member;
- St. Andrew's Catholic church, Life Teen Core Member/Young Adult Coordinator, Coral Springs, FL, 2004-2007

Skills

Platform experience: Android, Windows CE, BREW/Qualcomm MSM 6100/6550, Windows (NDIS), Platform Builder, and Linux (Server/Embedded).

Development languages: GNU C/C++, C#, VB.NET, PHP, Java Micro Edition (J2ME), JAVA (J2SE), and MySQL

Other programming languages: XML/XSD, LISP, PROLOG, FoxPro, Pascal, Embedded design, Intel assembly code (i8051, x86), and TCL/TK. Experience developing in Netbeans and Eclipse/

Internet Networking: 10 yrs of experience, proficient in most networking and mobility protocols, CISCO IOS configuration, Mobile IP, IP network topologies. Web design tools (Adobe Illustrator, Ikiyo SVG, web authoring tools)

Scientific and engineering tools: MATLAB, pSPICE, OrCAD, Network Simulator (ns-2), wide experience in electronic circuit design, digital design, and low-level debugging tools, including PC-104 and circuit design.

Fluent in Spanish/English and knowledge of some German/French.

References

Dr. Sumi Helal, Associate Professor, CISE Department,
Room 448, Computer Science & Eng. Bldg. P.O. Box 116125 ,
Gainesville , Florida 32611-6120 Tel (352) 392-6845 Fax (352) 392-3238
<http://www.cise.ufl.edu/~helal/>

Dr. Arun Ayyagari, Research scientist, Researcher Boeing Phantom Works
Tel: (206) 655 5996

Pradeel Bahl, Microsoft Product Unit Manager

Dr. Jyh-Han Lin, Software Director, Motorola, Inc, 8000 W. Sunrise Blvd, Plantation, FL, 33322.
Tel: (954) 723 3886