

Ana Maria Tekina-eirú Maynard, Ph.D.

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Expertise: STEM Education through Arts, Diversity Training, University Relations/Technical Recruiting

Awards:

IBM Patents – 9 Patents Filed in Usability, Machine Translation Support of Human Language Applications, Enhanced Automatic Language Detection, Next-Generation Globalization, 2002-2011
IBM 2nd Invention Plateau, 3 patents rated FILE in the area of Next-Generation Globalization, 2008
IBM 1st Invention Plateau, 4 patents rated FILE in the area of Next-Generation Usability, 2007
IBM Research Division Award - “SimOS-PPC Development”, October 2000
IBM Technical Author Recognition Award, Jan. 1995
IBM Outstanding Technical Achievement -“RS/6000 Memory Subsystem Analysis”, Nov. 1994
Trailblazer Award from University of Texas at Austin, College of Natural Science, October 2003
Austin YWCA Woman of the Year for Arts, October 2005

Education

Ph.D. in Electrical and Computer Engineering Carnegie Mellon University, Pittsburgh, Pennsylvania AT&T Cooperative Research Fellowship Program (PhD Fellowship) Thesis: <i>Utilization of Idle Time in High Performance Processors (Multi-threading)</i>	January 1992
Master of Science in Electrical and Computer Engineering Carnegie Mellon University, Pittsburgh, Pennsylvania Thesis: <i>Fault-Free Performance Validation of Fault-Tolerant Multiprocessors</i>	May 1986
Bachelor of Science in Electrical and Computer Engineering (cum laude) Polytechnic Institute of New York, Brooklyn, New York Eta Kappa Nu, Dean's List	May 1984
IBM Leadership Excellence University	September 2002
IBM MicroMBA Program	April 2001

Applied Research & Consulting

Flametree Corporation, President & Applied Research (<http://flametree.com>) 1998 – Present
Dr. Maynard combines her 20 years of experience in the high-tech industry with over 15 years of leadership, artistic creation and performance in the non-profit sector to deliver applied research, innovative workshops, and consulting services spanning a wide range of disciplines, including but are not limited to:

STEM Education through Arts – Applied Research

- STEM to STEAM Education – applied research is developing a pilot program of innovative, hands-on project-based learning to inspire K-12 and Adult learning excitement for STEM education through Arts.

Cultural Competence, Corporate & Community Empowerment

- Cultural Competence - workshops on leading global teams, and diversity, inclusion and cultural competence in today's globalized world, including diversity across Hispanic and Latino cultures.
- Hispanic/Latino Diversity - lecture series builds appreciation through a journey of Puerto Rico's history that developed its rich cultural traditions and its people; with live native flute music.
- Empowering Youth & Community - workshops designed to empower youth and community, including pursuit of higher education, and inspirational youth centric talks.
- Non-profit Consulting – Executive administration, mission formation and development, grant writing.
- University Relations/Technical Recruiting – development of programs, public-private research collaborations, and long-term faculty relationships that support student growth and recruiting.

Non-Profit Cultural Arts Leadership

Founding Executive & Artistic Director

Puerto Rican Folkloric Dance & Cultural Center (<http://prfdance.org>)

Sept 1997 – Present

Founding Executive and Artistic Director of the only cultural center in Texas and our four surrounding states

affiliated with the Institute of Puerto Rican Culture for offering authentic, high-quality cultural programming. The mission of this all-volunteer run Non-Profit (501(c)(3)) is to promote cultural awareness and pride through authentic performances and high-quality educational programs in the folkloric performing arts (dance, music, and theatre), the teaching of our history and cultural traditions. Achievement and quality is also validated by repeat support by National Endowment for the Arts, Texas Commission on the Arts, City of Austin through the Cultural Arts Division, and Humanities Texas. Dr. Maynard has been the visionary since the center's inception, providing mission and program development, grant writing, and administration with 20+ volunteers. She is Artistic Director, choreographer and playwright for PRFDance performing company of dancers and musicians, and performs and teaches traditional music, dance, theatre and culture to preschool through adults.

Technical Leadership & Applied Research

Researcher (Technical Lead, Globalization & Multicultural Support)

IBM Research Human Ability & Accessibility Center, Austin Texas

July 2006 – February 2012

Globalization Lead with mission to enhance human ability and accessibility with applied research in multi-cultural and multilingual support of human language applications, through automatic machine translation and multilingual TTS capability, including text-to-text and text-to-speech applications. Ground-breaking research contributed to prototype projects, being used at IBM world-wide, as well as underway. Generated patents in machine translation support of collaborative tools and enhanced automatic language detection.

University Relations / Campus Relationship Manager (Technical Recruiting)

University of Puerto Rico-Mayaguez (UPRM)

1998 - February 2012

Built invaluable long-term relationships with University of Puerto Rico-Mayaguez professors that supported IBM Research technical recruiting at all levels, with specialty in Hispanic PhD development and recruitment. UPRM is the #1 Engineering School in the Caribbean. Identified outstanding PhD-bound students to mentor and track for IBM Research HR Talent Program, as well as students to recruit for IBM-supported GEM fellowships, IBM internships, and IBM Development Division employment opportunities. Relationships facilitated the identification and building of collaborative research between professors and IBM groups.

Researcher (Technical Lead, Globalization & Human Factors)

IBM Austin Research Laboratory & HA&AC, Austin Texas

January 2005 – September 2007

Multicultural support Lead of global team (US-Asia) that developed successful IBM-internal (TAP Project) prototype. Conducted applied research for IBM CIO Innovations in globalization and human factors for enterprise-grade multimodal applications for mobile devices. Globalization research developed next-generation multilingual support for an enterprise library management system for digital media using dynamic media synthesis. Human factors research for this project created a next-generation methodology that gives usability experts the capability to identify issues that degrade "user experience" for complex systems, applications, and products that contain layers of complexity not visible from user interface. Research generated two levels of Invention Plateaus (~8 patents).

Program Director (Corporate/University Research Collaborations)

IBM Austin Center for Advanced Studies (Austin CAS)

February 2000 – July 2006

Developed and directed a \$1M annual university research program that serves the IBM Austin Site. Austin CAS is dedicated to promoting and cultivating collaborative research between IBM organizations across the corporation and universities worldwide. With more than 30 IBM Research and Development business units on site driving innovative products and technologies, Austin CAS brings a focal point to the Site's university relationships. ACAS annually umbrellas approximately 30 projects per year with 20 universities worldwide for a dozen IBM organizations that conduct research in future systems, software and business strategies.

Senior Engineer (Technical Lead, Performance)

September 1997 - February 2000

IBM Austin Research Laboratory, Austin, Texas

Technical Lead of performance focus of IBM's Full System Simulation Project, SimOS-PPC. The goal of this project was to provide IBM with a software environment that would facilitate the design of high performing systems for Server and PC Server markets. Conducted early performance work with first customers in an effort to drive changes into the simulation environment that would improve its usefulness and usability. Project contributions included implementation of address translation unit, the memory hierarchy, and features dedicated to symmetric multiprocessing.

Senior Engineer (Technical Team Lead)

January 1992 - August 1997

IBM Corporation, Austin, Texas

Technical Team Lead of small hardware performance group which supported PPS, PSP and RS/6000 Divisions. For four years, conducted system-level hardware performance studies to drive product designs of future PowerPC and Power2 systems under AIX and microkernel-based operating systems. Activities

included analytic modeling, trace-driven simulation and performance analysis of future system designs for commercial markets, with emphasis on memory subsystem. Fifth/last year, focused on I/O, uniprocessor and symmetric multiprocessor performance issues for OS/2 on Intel-Based systems for server market.

Member of Technical Staff

June 1989 - August 1989 (Summer)

AT&T Bell Laboratories, Murray Hill NJ

Investigated how processor idle time may be utilized to provide error detection in high performance pipelined processors. This unique concept, and its more general applicability, was invented while doing PhD Thesis research and is today known as "Multithreading."

Member of Technical Staff

June 1987 - August 1987 (Summer)

AT&T Bell Laboratories, Murray Hill NJ

Investigated how numerical algorithms are programmed on high performance machines. Implemented Linpack routines on an experimental high performance processor in the native assembly language of the processor, and measured its performance.

Member of Technical Staff

June 1986 - August 1986 (Summer)

AT&T Bell Laboratories, Murray Hill NJ

Designed and performed layout of a packet switching network for use in multiprocessor communications. Used ICON, a layout and simulation tool, for CMOS VLSI layout.

Research

June 1985 - August 1985 (Summer)

NASA Langley Research Center, AIRLAB

Conducted fault-free performance validation of SIFT, an experimental multiprocessor system designed to provide extremely reliable computing service for critical functions in aircraft.

Senior Technical Associate

June 1984 - August 1984 (Summer)

AT&T Bell Laboratories, Murray Hill NJ

Used Prolog to describe and evaluate logic circuits. Implemented behavioral descriptions for both combinational and synchronous sequential circuit, and verified them for functional correctness.

IEEE Workshop on Workload Characterization

1998 - 2004

Founding Program Co-chairs: Prof. Lizy John, Univ. of Texas at Austin, and Dr. Ann Marie G. Maynard

Technology Patents

2011 - Creating a session log with a table of records for a computing device being studied for usability by a plurality of usability experts. W K Bodin, A M Maynard, D C Thorson, US Patent 7,912,803.

2011 - Enhancing Language Detection in Short Communications. Q Lai, A M G Maynard, US Patent 20,110,246,180.

2010 - Creating a session log for studying usability of computing devices used for social networking by filtering observations based on roles of usability experts. W K Bodin, A M Maynard, D C Thorson, US Patent 7,822,702.

2009 - Multilingual Support for an Improved Messaging System. A M G Maynard, Q Z Lai, US Patent App. 12/464,365.

2008 - Multilingual Asynchronous Communications Of Speech Messages Recorded In Digital Media Files. W K Bodin, D Jaramillo, A M Maynard, US Patent App. 12/108,726.

2007 - Creating A Session Log For A Computing Device Being Studied For Usability. W K Bodin, A M Maynard, D C Thorson, US Patent App. 20,090/006,108.

2004 - Improved Computer Memory Address Translation System 2004-08-01 NI-220032 Taiwan

2002 - Computer memory address translation system. A M Maynard, B C Twichell, US Patent 6,442,664.

2002 - Improved Computer Memory Address Translation System 2002-07-08 346014 Korea, Republic of.

2011 - US Patent Rated Publish, Advanced Technology (voice recognition, transcription, translation, automatic language identification, text-to-speech) to support Second Language Learners, AUS8-2010-0496

2011 - Patent Disclosure Rated File, Next Generation Multilingual Support for Collaborative Tools, AUS9-2009-0018US1

Techology Books & Publications

"Enterprise Library Management for Digital Media with Dynamic Media Synthesis," WK Bodin and Ann Marie Maynard, IEEE International Symposium on Wireless Pervasive Computing 2007, San Juan, Puerto Rico, February 5-7, 2007.

IISWC-2007 - M Breternitz, D Christie, A Sivasubramaniam, L Eeckhout, W Liu, B Urgaonkar, C Wang, R Sendag, S Hu, A Martin-de-Nicolas, others, M Breternitz, D Christie, A Sivasubramaniam, Workshop Committee. K De, K Flanagan, L Kurian, D Kaeli, K Lepak, A M G Maynard, M Annavaram, R Radhakrishnan, N Ullah, Computer.org.

"Workload Characterization of Emerging Computer Applications", John, Lizy Kurian and Maynard, Ann Marie Grizzaffi, Editors, Kluwer Academic Publishers, Springer Netherlands, 2001.

"Workload Characterization for Computer System Design", John, Lizy Kurian and Maynard, Ann Marie Grizzaffi, Editors, Kluwer Academic Publishers, 2000.

"Workload Characterization: Methodology and Case Studies", John, Lizy Kurian and Maynard, Ann Marie Grizzaffi, Editors, IEEE Computer Society, 1999.

"Contrasting Branch Characteristics and Branch Predictor Performance of C++ and C Programs", Da-Chih Tang, Ann Marie Grizzaffi Maynard, and Lizy John, 17th IEEE Performance Computers and Communications Conference, Phoenix, AZ, February 1999.

Contrasting branch characteristics and branch predictor performance of C++ and C programs. D C D Tang, A M G Maynard, L K John, Performance, Computing and Communications Conference, 1999.

"Investigating Design Trade-offs for Technical and Multi-User Commercial Workloads", Ann Marie Grizzaffi Maynard, Colette M. Donnelly, and Bret Olszewski, Nikkei Electronics (Japan), Nikkei Business Publications, Inc., January 30, 1995.

"Contrasting Characteristics and Cache Performance of Technical and Multi-User Commercial Workloads", Ann Marie Grizzaffi Maynard, Colette M. Donnelly, and Bret Olszewski, ASPLOS-VI: Sixth International Conference on Architectural Support for Programming Languages and Operating Systems, San Jose, California, October 4-7, 1994.

"Commercial Workload Performance in the IBM Power2 RISC System/6000 Processor", M. T. Franklin, W. P. Alexander, R. Jauhari, A. M. G. Maynard, B. R. Olszewski, IBM Journal of Research and Development, Volume 38, Number 5, September 1994.

"Estimating and Contrasting Performance of Power Personal 6XX-Based Uniprocessor Systems", Ann Marie Grizzaffi Maynard, Colette Donnelly, Tom Keller, Bob Urquhart, May 4, 1994. (IBM White Paper)

"Estimating Trailing Edge Effects for Power2 Based Systems", Ann Marie Grizzaffi Maynard and Bob Urquhart, IBM Technical Report #51.0813, 1993. (IBM Confidential)

"Estimating L2 Cache Performance on Power2 Based Systems", Ann Marie Grizzaffi Maynard and Bret Olszewski, IBM Technical Report #51.0731, 1993. (IBM Confidential)

POWER2 Commercial Workload Performance. M Franklin, W Alexander, R Jauhari, A M G Maynard, B Olszewski, IBM RISC System/6000 Technology, 1993.

"Utilization of Idle Time in High Performance Processors", Ann Marie Grizzaffi Maynard, PhD Thesis, Dept. of Elec. and Computer Eng., Carnegie Mellon University, Jan. 1992 (Today known as Multi-Threading)

"Fault-Free Performance Validation of Fault-Tolerant Multiprocessors" E. W. Czeck and A. M. Grizzaffi, NASA Contractor Report, January 1987.

"Fault-Free Performance Validation of Avionic Multiprocessors", E. W. Czeck, F. E. Feather, A. M. Grizzaffi, Z. Z. Segall, and D. P. Siewiorek, 7th Digital Avionics Systems Conference, Forth Worth, Oct 1986.