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AISHA WALCOTT, PHD

EDUCATION

June 2011	Massachusetts Institute of Technology (MIT), PhD Electrical Engineering and Computer Science (EECS) Department Thesis- "Long-term Mobile Robot Mapping in Dynamic Environments"	Cambridge, MA
May 2004	Massachusetts Institute of Technology (MIT), SM Electrical Engineering and Computer Science (EECS) Department Thesis- "Unifying Model-Based Programming and Randomized Path Planning Through Optimal Search"	Cambridge, MA
May 2000	Clark Atlanta University (CAU), BS Computer Science (CS) Department	Atlanta, GA

SKILLS

Java, C++, C, Artificial Intelligence, Robotics, Smart Cities, Sustainable technologies for emerging markets and developing communities, Software development, Internet of Things, Teaching, Microcontrollers, Windows, Linux

EXPERIENCE

2012- Present	Barcelona Digital (BDigital), Research Scientist Mobility and Energy Research+Development Group Personalized Smart Cities research projects developing large-scale software with multiple institutions across several countries. Developing recommender systems for personalized mobility through cities. Developing systems to personalize dynamically generated items such as events and journey plans for users. Creating a generalized platform for content-based and collaborative filtering recommender systems.	Barcelona, Spain
2011	Telefonica I+D, Researcher Physical Internet Group Developed hardware/software for the Telefonica-Arduino GSM/GPRS shield and its use in the Internet of Things. Created pilot applications and researched potential technology solutions for emerging markets.	Madrid, Spain
2011	Massachusetts Institute of Technology (MIT), Research Assistant Electrical Engineering and Computer Science Department Probabilistic Robotics Research Group, Supervisor: Professor John Leonard PhD Thesis-Researched and developed algorithms for an autonomous mobile robot that operates in initially unknown, dynamic environments for long periods.	Cambridge, MA
2004	Model-based Embedded Robotics Systems Research Group, Supervisor: Professor Brian Williams Developed a model to represent possible plans for robots used in search and rescue missions. Designed and implemented an optimal feasible planner combining model-based planning and roadmap-based path planning.	
2003	IBM Thomas J. Watson Research Center Software Developer Researched an integrated platform for business processes and events, developed a business process in WebSphere Studio Application Developer Integration Edition and Java to unify the overall process of a business with business state. Worked on the Telecommunications Vision Team to create a vision for near future technologies.	Yorktown, NY
2001	Lucent Technologies Junior Software Developer Worked with physicist and biologist seeking to build a robot capable of detecting chemicals. Implemented wireless communication and control for a robot in Java and C.	Murray Hill, NJ
2000	Johns Hopkins University, Applied Physics Lab Junior Software Developer Developed efficient method to extract and interpret large volumes of oceanic data, improved previous data analysis methods with Java based application with graphical user interface to interpret and visualize the data	Laurel, MD

TEACHING EXPERIENCE

- 2005 **Massachusetts Institute of Technology (MIT)** Cambridge, MA
Robotics Science and Systems Course
Worked with professors and TAs to develop, implement and test robotics labs, helped construct robots as teaching aids, implemented robot software in Java.
- 2004 **University of Ghana- MIT Accelerating Information Technology Initiative** Ghana, Africa
Instructor for Computer Programming and Entrepreneurship Course
Worked with a team of MIT students to teach computer programming in Java, JSP, and entrepreneurship to 70 students.
- 1998-2000 **Clark Atlanta University** Atlanta, GA
C++ Data Structures Course, C Programming Course, and Intro to Computer Science Course
Prepared and lead recitations, helped students in software design and with implementation of labs and projects, and introduced students to Unix-based development environment.

LEADERSHIP AND SERVICE

- 2007-Present Laare Community Technology Center, Program developer and computer instructor. Kenya
- 2007 EmergeGlobal.org, Developing strategies to economically empower abused girls in Sri Lanka Cambridge, MA
- 2006 MIT Summer Research Program (MSRP), Program group leader Cambridge, MA
- 2003-2010 MIT Graduate Resident Tutor (GRT) Cambridge, MA
- 2002-2011 MIT Educational Technologies Group, Co-Founder of graduate student scholars group Cambridge, MA
- 2002-2010 MIT Undergraduate (UROP) and senior theses supervisor Cambridge, MA
- 2002-2006 Horizon's for Homeless Children, Volunteer Boston, MA
- 2004 Fab Lab MIT Center for Bits and Atoms, Takoradi Technical Institute, Deployment and Instructor Ghana
- 2000-2002 TV Show host and producer at Archer Broadcasting Company International TV Boston, MA

SELECTED PUBLICATIONS

- A. Walcott, M. Kaess, J Johansson, J J Leonard. "Dynamic Pose Graph SLAM: Long-term Mapping in Low-dynamic Environments," In IEEE/RSJ Intl. Conf. on Intelligent Robots and Systems, IROS, Vilamoura, Portugal, Oct. 2012.
- A. Walcott. "Long-term Mobile Robot Mapping in Dynamic Environments", MIT PhD Thesis, May 2011.
- S. Hines, E. Mibuari, A. Walcott, R. Chapman. "Enabling Community Advancement through Sustainable Technologies Model," IEEE/ ACM International Conference on Information and Communication Technologies and Development Demonstratio,n April 2009.
- E. Brittain, R. Bryant, L. Chandler, R. Chapman, S. Daily, M. Hampton, I. Mills, A. Walcott. "A Model for Supporting Graduate Student Success," American Society of Engineering Education (ASEE), Hawaii, June 2007.
- A. Walcott and B. Williams, "Efficient Extraction of Optimal, Temporally Flexible Plans," in Proceedings of the 4th International Symp. on Robotics and Automation (ISRA 2006), Hidalgo, México, August 2006.
- A. Walcott. "Unifying Model-based Programming and Randomized Path Planning Through Optimal Search," MIT SM Thesis, May 2004.
- A. Walcott. "Globally Optimal Coordination of Cooperative Vehicles by Merging Model-Based Programming and Agile Path Planning," MIT Artificial Intelligence Laboratory Abstracts, 2003.
- B. C. Williams, P. Kim, M. Hofbaur, J. How, J. Kennell, J. Loy, R. Ragno, J. Stedl and A. Walcott., "Model-based Reactive Programming of Cooperative Vehicles for Mars Exploration," Int. Symp. on AI, Robotics and Automation in Space, St-Hubert, Canada, June 2001.

AWARDS

MIT Dr. Martin Luther King Jr. Leadership Award, MIT GSO-Lemelson Fellowship, Lucent Technologies Corporate Research Fellowship Program, MIT Graduate Students Office Fellowship, Clark Atlanta University Academic Scholarship, Motorola Scholarship Award, DuPont Academic Excellence Award, NSBE Fellow Award, MIT Public Service Center Fellowship

LANGUAGES English (native) and Spanish (intermediate)