Kavita Krishnaswamy

University of Maryland, Baltimore County
Department of Computer Science and Electrical Engineering
1000 Hilltop Circle
Baltimore, MD 21250

443-718-9463
kavi1@umbc.edu
http://www.csee.umbc.edu/~kavi1

RESEARCH INTERESTS

Robotic systems to increase independence for people with disabilities and the elderly using artificial intelligence, machine learning, teleoperation, brain-computer interface, and assistive technologies to improve quality of life.

EDUCATION

Fall 2009 – Present *Expected Graduation – May 2017*	**Ph. D. Candidate,** Computer Science, GPA:4.0/4.0 *University of Maryland, Baltimore County* (UMBC)
December 2007	**B. S.,** Computer Science and Mathematics (Dual Major) , GPA:4.0/4.0 *University of Maryland, Baltimore County* , Summa Cum Laude

PREVIOUS APPOINTMENTS

May - December 2013

Rehabilitation Robotics Researcher
Human Engineering Research Laboratories (HERL) , University of Pittsburg
Designed and developed software with C# and OpenGL to control the Kitchenbot equipped with the Jaco robotic arm for assisting people with disabilities in performing tasks, such as, to open/close cabinet doors and turn on/off appliances.

June - September 2012

AI Researcher
Knexus Research Corporation
Utilized the JIDE Docking Framework and JfreeChart package to develop a dynamic Java GUI built for the Cognitive Architecture for Mine Counter Measures Planning Execution and Replanning project to control robots on simulated missions.

June - September 2011

Robotics Interaction Researcher
Alliance for Access to Computing Careers
Designed and implemented an accessible web interface to control a simulated robotic hand with WebGL, JavaScript, and Blender for 3D graphics and animation effects.

May 2008 - September 2009

Web and Graphic Designer
Silver Hill Technology
Created several customized websites for publicizing information and services with HTML and design graphical images and animations using Photoshop and Flash.

February - September 2004

Research Assistant
Department of Computer Science and Electrical Engineering, UMBC
Classified data sets with through image ranking on Waikato Environment for Knowledge Analysis (WEKA) and re-implemented a pairwise preference learning algorithm to identify subset of Mars rover images.

June - September 2003

Software Intern Engineer
IBM Business Consulting Services via AAAS ENTRYPOINT!
Documented product details of HyPerformix model that computed CPU asymptotic performance, debugged Visual Basic code, and learned XML to create a Web chat room.

June 2002 - August 2003

Web Master and GUI Programmer
Independence Now
Implemented a website for publicizing information and services and developed a Visual Basic employee time-keeping program.

June - August 2002

Research Analyst
Department of Physics, UMBC
Correlated statistics of aerosol index levels and epidemic breakouts in Africa with SAS.

June 2000 - August 2001

Statistical Researcher
University of Maryland, School of Medicine
Analyzed data and discovered several factors affecting Hepatitis C in Egypt using SAS.

SKILLS:
Programming Languages: Java, C/C++, C#, Python, JavaScript, HTML/CSS, SAS, PHP, OpenGL, WebGL
Databases: Oracle SQL & PL/SQL, MySQL
Operating Systems: Linux, Unix, Windows, Mac OS
IDEs: Eclipse, NetBeans, Microsoft Visual Studio
Softwares: Microsoft Office, Visual Basic, Blender, Adobe Flash, Autodesk 3ds Max, ROS
Methodologies: Black, white, and gray box quality assurance testing

REVIEWING

2013	Reviewer, *Assistive Technologies, Disability Informatics and Computer Access for Motor Limitations*
2012	External Reviewer, *ACM SIGCHI Conference on Human Factors in Computing Systems (CHI 2012)*

SCHOLARSHIPS AND FELLOWSHIPS

2012 - Present	Graduate Research Fellowship, *National Science Foundation*
2011 - Present	Ford Foundation Predoctoral Fellowship, *National Academy of Sciences*
2009 – 2011	Bridge to the Doctorate Fellowship, *Louis Stokes Alliance for Minority Participation (LSAMP)*
2001 - 2005	Meyerhoff Scholarship**,** *Robert and Jane Meyerhoff Foundation*

HONORS AND AWARDS

2015	Led the Winning UMBC Debate: Ethics of Brain-Computer Interface Technology
2012 - Present	Co-Chair of the Maryland Commission Committee on Personal Care Services
2012	Keynote Speaker at the 22nd Anniversary of the American Disabilities Act Celebration with Governor Martin O'Malley, Secretary of Disabilities, and UMBC President Dr. Freeman Hrabowski
2011	Outstanding Oral Presentation at the UMBC Graduate Research Conference
2009 - Present	Governor O'Malley's appointee to the Maryland Commission on Disabilities
2001 - 2003	UMBC Marketing Committee Manager
2001	Honorary Speaker at the 11th Anniversary of the American Disabilities Act Celebration with Secretary of Labor Department, Elaine Chao, Senator Bob Dole, and Mr. Teddy Pendergrass

CONFERENCES AND EVENTS

2015	American Alliance of Museums Expo
2015	Robot NightLife: California Academy of Sciences
2015	South by Southwest (SXSW)
2015	Silicon Valley Robotics: Robots for Humanity
2015	Navigating Uncharted Waters: Museums at the Forefront
2015	Hardware Con 3
2015	Annual Museums and the Web Conference
2015	ACM/IEEE International Conference on Human-Robot Interaction
2015	Mobile World Congress
2015	International Consumer Electronics Show (CES)
2014	International Joint Conference on Pervasive and Ubiquitous Computing
2014	International ACM SIGACCESS Conference on Computers and Accessibility
2012	Computer Human Interaction Mentoring (CHIMe) Workshop
2012	Academic Workshop in Computing for Underrepresented Ethnic Minorities and People with Disabilities at the level of Assistant Professor, Associate Professor, and Senior Doctoral Student
2011	International Conference on Pervasive Technologies Related to Assistive Environments

PUBLICATIONS AND PRESENTATIONS

2015   **Beam Me In! Remote Access to Museums,** with C. Cliver and C. Castillo. *American Alliance of Museums Expo.*

2015   **People with Disabilities Can "Be There" Too,** with E. Rapacki and H. Evans. *South by Southwest Panel.*

2015   **Robot Invasion,** with A. Keay, E. Rapacki, and D. Sures. *Hardware Con 3 Panel.*

2015   **Attending Conferences via Robots,** with AccessComputing Team *DO-IT News.* Link

2015   **Will your Robot Care for You?,** with L. Ulanoff, A. Canoso, and B. Maisonnier. *International Consumer Electronics Show (CES) Lifelong Tech Summit 2015 Panel.*

2014   **Assistive Technology Research as a Mechanism to Broaden the Participation of Women, Underrepresented Minorities, and Persons with Disabilities,** with P. Ordóñez, R. G. Tull, D. Ding, and M. L. Goldberg. *Latin American and Caribbean Conference for Engineering and Technology.*

2014   **Focus Group Evaluation of an Overhead Kitchen Robot Appliance,** with D Ding, H. Ka, R. Cooper, and J. Telson. *Annual Conference on Rehabilitation Engineering.*

2014   **Pathway to Independence: Past, Present, and Beyond via Robotics,** with T. Oates. *Disability Informatics and Web Accessibility for Motor Limitations.*

2014   **Robotic Web Interface for Hand Reposition,** Poster and Panel. *National Science Foundation on Increasing the Participation of Individuals with Disabilities Event.*

2013   **Getting Out of the Shallow End: Techniques for empowering and encouraging underrepresented women in computing,** with P. Ordóñez, T. Armstrong, K. Alkoby, and J. Goode. *Grace Hopper Celebration of Women in Computing 2013 Panel.*

2012   **Toward the Development of a BCI and Gestural Interface to Support Individuals with Physical Disabilities,** with R. Kuber. *Proceedings of the 14th International ACM SIGACCESS Conference on Computers and Accessibility.*

2012   **IT Accessibility Law, Policy, and Implementation,** with G. Hanley, T. Mitrano, T. Thompson, D. Goldstein, and V. Martin. *Proceedings of the 2011 EDUCAUSE Annual Conference.*

2011   **Real-Time Path Planning for a Robotic Arm,** with J. Sleeman and T. Oates. *Proceedings of the 4th International Conference on Pervasive Technologies Related to Assistive Environments.*

ACKNOWLEDGMENTS

2015   CNN Interviewed Article: Will robots help the bedridden see the world? Link

2015   Dr. Richard Ladner's Design for User Empowerment (ACM Interactions) Link

2015   Forbes Contributor Article: 6 Ideas From South By Southwest That Could Change Boomers' Lives Link

2015   Featured in Video created by Suitable Technologies Link

2012   UMBC Meet the Students: Kavita Krishnaswamy Link

2011   Grad Student With Spinal Muscular Atrophy Excels! Kavita's Story Link

2007   Straight A's required an unswerving effort, Catonsville Times Link

2007   Appeared on the Caring magazine cover page by the National Association for Home Care & Hospice Link

2006   Wanted: A few good (teen) leaders, Muscular Dystrophy Association Quest Magazine Link

2000   Student's goal: to be an advocate for the disabled, Baltimore Sun Link