Kasthuri Jayarajah

CURRENT APPOINTMENT	**Research Assistant Professor (Nov, 2021 - current).** **University of Maryland, Baltimore County.** *Center for Real-time Distributed Sensing and Autonomy*

CONTACT INFORMATION

900 Walker Avenue,
 Baltimore, MD 21250.

E-mail: kasthuri@umbc.edu
 URL: https://kjayarajah.github.io/

INTERESTS

Mobile and Ubiquitous Computing, AI for IoT, Human-Autonomy Teaming

EDUCATION

Singapore Management University, Singapore.

PhD in Information Systems, 2014 - 2019.
Advisors: Dr. Archan Misra (SMU), Dr. Shili Xiang (A*STAR).
Thesis Title: **Exploiting Mobility for Predictive Urban Systems.**
Committee: Anind Dey (Dean, iSchool, University of Washington),
Ramayya Krishnan (Dean, Heinz College, Carnegie Mellon University),

Carnegie Mellon University, Pittsburgh, USA (Fall, 2016).

National University of Singapore, Master of Computing, 2012-2013.

University of Moratuwa, Sri Lanka, B. Sc. Eng., Electronic and Telecommunication Eng., 2010.

GRANTS

Senior Personnel, U.S. Army Grant No. W911NF21-20076 under the ArtIAMAS Cooperative Agreement. $68 Million USD (2021-2025). UMBC's Subaward: 20.5 Million USD.

1. **Project Lead**, *Collaborative Models for Real-Time Situational Understanding*, Feb'23 - April'24, Total: 600,000 USD.

2. **Project Co-Lead**, *Resilient and Effective Communication and Sensing for Autonomous Platforms and Systems*, Nov'21 - Apr'24, Total: 1,050,000 USD.

3. **Project Co-Lead**, *Human-Machine Teaming*, Nov'21 - Apr'24, Total: 1,000,000 USD.

AWARDS AND HONORS

2020	Named a **Rising Star in EECS 2020** by UC Berkeley (the only awardee from Singapore).
2019	Finalist, **Gaetano Borriello Outstanding Student Award (one of only 5 worldwide)**, Presented at UbiComp 2019.
2018	**SMU Multidisciplinary Doctoral Fellowship** (top 5% of the PhD cohort)
2018	**Best Paper Award (PURBA 2018, co-located with UbiComp 2018)**
2017	**Google Women Techmakers Scholar (APAC)** (one of 5 awardees from Singapore)
2017	**Honorable Mention, Open Mobility Task Challenge, ACM CIKM 2017**
2014 – 2018	**A*STAR Graduate Scholarship (AGS)**
2012 – 2013	**O. N. M. Kulashesthra Award for academic excellence**, University of Moratuwa

ARTICLES UNDER REVIEW

Key: [S] Under Review, [J] Peer Reviewed Journals, [C] Peer Reviewed Conference, [W] Workshop. Students/Engineers I advise(d) are underlined.

[S3] I. Ghosh, **K. Jayarajah**, N. Roy and N. Waytowich. Memento: Improving Working Memory Recall using Wearable-Assisted Cueing

[S2] M. Ahmed, Z. Hassan, **K. Jayarajah**, S. Purushotham, S. Yu and N. Roy. EdgeTune: On-the-Fly Tuning of Vision DNNs for the Internet of Things

[S1] **K. Jayarajah.**, and A. Misra. SCANets: Selective Collaboration for Camera Networks at the Edge

PEER-REVIEWED JOURNAL, CONFERENCE & WORKSHOP PUBLICATIONS

[W10] **K. Jayarajah.**, S. Gart and A. Gangopadhyay. AirDrop: Towards Collaborative, Multi-Resolution Air–Ground Teaming for Terrain-Aware Navigation, To Appear in the Proceedings of the 24th International Workshop on Mobile Computing Systems and Applications. ***ACM HotMobile'23.***

[W9] **Jayarajah, K.**, A. Gangopadhyay and N. Waytowich. TagTeam: Towards Wearable-Assisted, Implicit Guidance for Human–Drone Teams, ***Proceedings of SmartWear'22 co-located with ACM MobiCom'22.***

[C13] **K. Jayarajah**, D. Wanniarachchige, T. Abdelzaher and A. Misra, ComAI: Enabling Lightweight, Collaborative Intelligence by Retrofitting Vision DNNs. Proceedings of the IEEE Conference on Computer Communications, 2022. ***IEEE INFOCOM'22.***
Acceptance Rate = 19.9%

[J4] R. Gupta, S. Mukherjee and **K. Jayarajah**, The Role of Group Cohesiveness in Targeted Mobile Promotions, **Journal of Business Research** (Special Issue on Mobile Applications), 2021.
Impact Factor 4.874.

[J3] T. Abdelzaher, Y. Hao, **K. Jayarajah**, A. Misra, P. Skarin, S. Yao, D. Weerakoon and K. Arzen, Five Challenges in Cloud-Enabled Intelligence and Control, ACM Transactions on Internet Technologies (**ACM ToIT**), Vol. 3, Issue 1, February 2020.
Impact Factor 3.750

[J2] **Jayarajah, K.** and A. Misra. Predicting Episodes of Non-Conformant Mobility in Indoor Environments. Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), Volume 2, Issue 4, Article 172, December 2018. ***UbiComp'19.***
One-Shot Acceptance Rate ≈ 7%

[C12] Meegahapola, L., T. Kandappu, **K. Jayarajah**, A. Misra, and L. Akoglu. BuSCOPE : Fusing Individual & Aggregated Mobility Behavior for Live Smart City Services, 2019. ***MobiSys'19.***
Acceptance Rate = 23.2%

[C11] S. Yao, Y. Hao, Y. Zhao, A. Piao, H. Shao, D. Liu, S. Liu, S. Hu, D. Weerakoon, **K. Jayarajah**, A. Misra and T. Abdelzaher, Eugene: Towards Deep Intelligence as a Service, 39th IEEE International Conference on Distributed Computing Systems (**ICDCS**), July 2019. (**Invited paper**)

[C10] D. Weerakoon, **K. Jayarajah**, R. Tandriansyah, A. Misra. Resilient Collaborative Intelligence for Adversarial IoT Environments, *The 22nd International Conference on Information Fusion (**FUSION 2019**).*

[C9] L. Meegahapola, N. Athaide, **K. Jayarajah**, S. Xiang, A. Misra. Inferring Accurate Bus Trajectories from Noisy Estimated Arrival Time Records, *IEEE Intelligent Transportation Systems Conference (**ITSC 2019**)*.

[J1] K. D'Silva, **K. Jayarajah (*co-primary)**, A. Noulas, C. Mascolo, and A. Misra. The Role of Urban Mobility in Retail Business Survival. Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), Volume 2, Issue 3, Article 100, September 2018.***UbiComp'18***.
Acceptance Rate ≈ 20–25%

[W8] **Jayarajah, K.**, A. Tan and A. Misra. Exploiting the Inter-dependency of Land Use and Mobility for Applications in Urban Planning, 2018 ***UbiComp/ISWC 2018 Adjunct Proceedings, Best Paper***.

[C8] Gupta, R., S. Mukherjee, **K. Jayarajah**. Role of Group Cohesiveness in Consumers' Responses to Mobile Promotions, 2017. ***Association For Consumer Research Conference North America Advances (ACR)***.

[C7] **Jayarajah, K.**, R. K. Balan., M. Radhakrishnan, A. Misra and Y. Lee. LiveLabs: Enabling In-Situ Behavioural Experiments, 2016. ***MobiSys'16***.
Acceptance Rate = 15.7%

[C6] **Jayarajah, K.** and A. Misra. Can Instagram Help Understand Micro-Events?. *The 19th International Conference on Information Fusion (**FUSION 2016**)*.

[W7] **Jayarajah, K.**, Z. Lantra and A. Misra. Fusing WiFi and Video Sensing for Accurate Group Detection in Indoor Spaces. *The Third Intl' Workshop on Physical Analytics (co-located with ACM MobiSys 2016)*.

[W6] **Jayarajah, K.**, M. Radhakrishnan, C. Zakaria. Duplicate Issue Detection for the Android Open Source Project, *5th Intl' Workshop on Software Mining (co-located with IEEE/ACM Intl' Conference on Automated Software Engineering 2016)*.

[W5] Dai, B. T., **K. Jayarajah**, E. P. Lim, A. Misra, S. Nayak. A Study on Singapore Haze. 1st International Workshop on Understanding Situations Through Multimodal Sensing (co-located with ICDCN), 2016.

[C5] **Jayarajah, K.**, Y. Lee, A. Misra, R. K. Balan. Need Accurate User Behavior? Pay Attention to Groups!, 2015. ***UbiComp'15***.
Acceptance Rate = 23.6%

[C4] **Jayarajah, K.**, A. Misra, X. W. Ruan, E. P. Lim. Event Detection: Exploiting Socio-Physical Interactions in Physical Spaces, 2015. ***IEEE/ACM ASONAM'15***.

[W4] **Jayarajah, K.**, S. Yao, R. Mutharaju, A. Misra, G. De Mel, J. Skipper, T. Abdelzaher, M. Kolodny. Social Signal Processing for Real-Time Situational Understanding: A Vision and Approach. SocialSens Workshop co-located with IEEE MASS, 2015.

[W3] **Jayarajah, K.**, M. Radhakrishnan, C. S. Hoi, A. Misra. Candy Crushing Your Sleep, 4th Workshop on Mobile Systems for Computational Social Science (co-located with ACM Ubicomp 2015).

[C3] Sen, R., Y. Lee, **K. Jayarajah**, A. Misra and R. K. Balan. GruMon: Fast and Accurate Group Monitoring for Heterogeneous Urban Spaces, 2014. ***SenSys'14***.

[W2] **Jayarajah, K.**, R. Kauffman, A. Misra. Exploring Variety Seeking Behavior in Mobile Users. Ubicomp'14 Adjunct Proceedings, September 2014.

[W1] Misra, A., **K. Jayarajah**, S. Nayak, P. K. Prasetyo and E. Lim. Socio-Physical Analytics: Challenges and Opportunities. 1st Workshop on Physical Analytics colocated with ACM MobiSys 2014.

[C2] Liu, S., S. Wang, **K. Jayarajah**, A. Misra and R. Krishnan. TODMIS: Mining communities from trajectories, 2013. ***CIKM'13***.
Acceptance Rate = 16.86%

[C1] Khan, A.J., **K. Jayarajah**, D. Han, A. Misra, R. K. Balan and S. Seshan. CAMEO: a middleware for mobile advertisement delivery, 2013. ***MobiSys'13***.
Acceptance Rate = 16%

OTHER PUBLICATIONS

[P7] A. Misra, **K. Jayarajah**, D. Weerakoon, R. Tandriansyah, S. Yao, T. Abdelzaher. Dependable machine intelligence at the tactical edge, *SPIE Defense+Security 2019*.

[P6] **Jayarajah, K.**, V. Subbaraju, N. Athaide, L. Meegahapola, A.Tan and A. Misra. Can multimodal sensing detect and localize transient events?, *SPIE Defense+Security 2018*.

[P5] **Jayarajah, K.**, V. Subbaraju, D. Weerakoon, A. Misra, L. T. Tam and N. Athaide. Discovering Anomalous Events from Urban Informatics Data. *SPIE Defense+Security 2017*.

[P4] Misra, A., Z. Lantra and **K. Jayarajah**. Ontology-aided Feature Correlation for Multi-Modal Urban Sensing, SPIE Defense+Security 2016.

[P3] Nayak, S., A. Misra, **K. Jayarajah**, P. K. Prasetyo, E. Lim. Exploring Discriminative Features for Anomaly Detection in Public Spaces, SPIE DSS 2015.

[P2] Naoko, T., I. Horathalge, O. N. N. Fernando, K. Zhu, **K. Jayarajah**, Y. Fernandopulle, R. Nakatsu. KabukiMono+: The Art of Kabuki Transformed, 3rd International Conference on Culture and Computing, 2012.

[P1] Sivakumaran, P., **K. Jayarajah**, I. Kanaganayagam, C. Gopalasingham, E. C. Kulasekere. Sonar Navigation Aid for the Visually Impaired, In proceedings of the 16th Annual Symposium of the Engineering Research Unit, Sri Lanka, November 2010, 193-198.

DEMOS AND POSTERS

Jayarajah, K., Z. Lantra, R. Kumar, A. Misra. Fusing WiFi and Video Sensing for Accurate Group Detection in Indoor Spaces, ACM MobiSys 2016.

Jayarajah, K., A. Misra, X. W. Ruan, E. P. Lim. Social Interactions-based Event Detection for Public Spaces , ICDCN 2016.

Jayarajah, K., Sen, R., Y. Lee, S. Nayak, A. Misra and R. K. Balan. Group analytics and insights for public spaces, ACM SenSys 2014.

Sen, R., Y. Lee, **K. Jayarajah**, A. Misra and R. K. Balan. GruMon: Fast and Accurate Group Monitoring for Heterogeneous Urban Spaces, ACM HotMobile 2014.

INVITED TALKS

Using Mobility and Social Media Data for Urban Situation Awareness, DPXΔ Talk Series, **Urban Redevelopment Authority, Singapore.** Oct, 2018.

Understanding Urban Events with CrowdSourced Data, **Computer Laboratory, University of Cambridge**. Aug, 2017.

SERVICES			
	Reviewer	2017 - 2022	PACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT) - [**Special Recognition for Outstanding Review × 1**]
	Reviewer	2019 - 2022	ACM CSCW, AAAI ICWSM
	Reviewer	2020	ACM TOIT, Elsevier PMC, IEEE TKDE, MobileHCI
	Reviewer	2019	ACM ISWC, ACM UIST, CHI'19 Late Breaking Work
	Reviewer	2016	IEEE Transactions on Mobile Computing
	TPC	2022	ACM MobiSys
	TPC	2022	ACM ICDCN
	TPC	2020	ACM IoTDI
	TPC	2018	ACM MobiSys Phd Forum
	TPC	2017	ACM S3 Workshop (co-located with ACM MobiCom 2017)
	Web Director	2017 - current	ACM SIGMOBILE
	Co-SV Chair	2018, 2021	UbiComp
	Co-Web Chair	2016, 2021	MobiSys
	Co-Web Chair	2018	UbiComp
	Co-Chair	2016	Women's Workshop co-located with MobiSys 2016
	Board Member	2015-2016	Networking Networking Women (An ACM SIGMOBILE program supported by IEEE COMSOC, IEEE TCCN, MSR, Google and HP Labs.
	Web Chair	2016	17th International Conference on Distributed Computing and Networking. January, 2016
	Web Chair	2015	2nd International Workshop on Physical Anaytics, colocated with MobiSys'15. May, 2015
	Web Chair	2015	4th ACM Workshop on Mobile Systems for Computational Social Science. September, 2015
	Founding Member	2010	Environment, Health and Safety Initiative, Virtusa Corp.
	Member	2008-2010	Electronic Club, University of Moratuwa

TEACHING EXPERIENCE			
	Adjunct Faculty	Spring'21, Fall'20	**Computer as an Analysis Tool (UG Course)**, Singapore Management University
	Guest Lecturer	Spring'21, Fall'19, Fall'18	**Mobile and Distributed Systems (PG Course)**, Singapore Management University
	Teaching Assistant	Spring 2017	**Advanced Research Topics (PG Course)** , Singapore Management University

STUDENT MENTORING	Indrajeet Ghosh (Phd), UMBC w/ Nirmalya Roy. January 2022 onwards
	Saisree Chukkapalli (Phd), UMBC w/ Anupam Joshi. January 2022 onwards.
	Mohammed Saied Anwar (Phd), UMBC w/ Nirmalya Roy. May 2022 onwards.
	Masud Ahmed (Phd), UMBC w/ Nirmalya Roy. October 2022 onwards.
	Dulanga Weerakoon (Phd), SMU w/ Archan Misra. Fall 2022.
	Kevin Rippy (Undergrad), UMBC/CompSci. May 2022 onwards.
	Jason Chen (Undergrad), UMBC/CompSci. May 2022 onwards.
	Liam McKinnon (Undergrad), UMBC/CompSci. May 2022 onwards.
	Luther Daigle (Undergrad), UMBC/Mechanical Eng. October 2022 onwards.
	Fouad Ayoub (Undergrad), UMD (College Park). Summer 2022.
	Praneeth Saimukku (Undergrad), UMD (College Park). Summer 2022.
	Kamsy Nwaivu (Undergrad), UMBC/CompSci. Summer 2022.
	Muntaha Sultana (Undergrad), UMBC/CompSci. Summer 2022.
	Ziri Nzeako (Undergrad), UMBC/CompSci. Summer 2022.
	Haonan Zhuang (Undergrad), UMBC/CompSci. Summer 2022.
	Dulanga Weerakoon (Undergrad), University of Moratuwa, Sri Lanka. Dec 2016 to Feb 2017.
	Sumit Singh (Masters), Indian Institute of Technology, Kharagpur, India. June 2016 - July 2016.
	Zaman Lantra (Undergrad), University of Moratuwa, Sri Lanka. October 2015 to April 2016.

RESEARCH EXPERIENCE

Research Fellow, Singapore Management University   July 2019 - Oct 2021
Advised by: Prof. Archan Misra.

Visiting Scholar   May 2017 - Aug 2017
Computer Laboratory, University of Cambridge, United Kingdom.
Advised by: Prof. Cecilia Mascolo.

Visiting Scholar   Aug 2016 - Dec 2016
Human-Computer Interaction Institute, Carnegie Mellon University, USA.
Advised by: Dr. Jennifer Mankoff, Dr. Anind Dey.

Research Intern   May 2015 - August 2015
Situational Understanding Research Institute, US Airforce Research Laboratory, USA.
Advised by: Michael Kolodny (ARL), Prof. Tarek Abdelzaher (UIUC), Dr. Geeth de Mel (IBM Research), Julie Skipper and Rob Williams (AFRL Discovery Lab).

Research Engineer   July 2012 - July 2014
Living Analytics Research Center, Singapore Management University, Singapore.
Advised by: Dr. Archan Misra.

Graduate Student Researcher   Jan 2012 - March 2012
Interactive and Digital Media Institute, National University of Singapore, Singapore.
Advised by: Dr. Owen Noel Fernando.

IN MEDIA

Cambridge Press Release, Location, location, location: researchers develop model to predict retail failure. Oct, 2018.

Science Talk, The Straits Times, Urban Living in the Age of Smart City (Opinion Editorial). May, 2018.

Research@SMU, Issue 14, LARC Research Exhibition: Better Living Through Analytics. May, 2014.

REFERENCES

Prof. Archan Misra
Vice Provost (Research)
Singapore Management University
archanm@smu.edu.sg

Prof. Anind Dey
Dean, iSchool
Universiy of Washington
anind@uw.edu

Prof. Cecilia Mascolo
Professor of Mobile Systems
Cambridge University
cm542@cam.ac.uk

Prof. Aryya Gangopadhyay
Prof. of Information Systems and Director, CARDS
Univ. of Maryland, Baltimore County
gangopad@umbc.edu

Prof. Tarek Abdelzaher
Professor and Willett Faculty Scholar
University of Illinois, Urbana Champaign
zaher@illinois.edu