

# Kasthuri Jayarajah

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CONTACT INFORMATION	Living Analytics Research Center Singapore Management University, Singapore 178902.	<i>Mobile:</i> (65) 9030 6257 <i>E-mail:</i> kasthuri@smu.edu.sg <i>URL:</i> <a href="https://kjayarajah.github.io/">https://kjayarajah.github.io/</a>
RESEARCH INTERESTS	Mobile and Pervasive Computing, Deep Learning for Embedded Systems, Edge Computing, Smart Environments & Urban Analytics, Mobile Marketing, Social Computing.	
EDUCATION	<b>Singapore Management University</b> , Singapore. PhD in Information Systems, 2014 - 2019. <u>Advisors:</u> Dr. Archan Misra (SMU), Dr. Shili Xiang (A*STAR). <u>Thesis Title:</u> <b>Exploiting Mobility for Predictive Urban Systems.</b> <u>Committee:</u> Anind Dey (Dean, iSchool, University of Washington), Ramayya Krishnan (Dean, Heinz College, Carnegie Mellon University), Rajesh Balan (SMU), Ee-Peng Lim (SMU)  <b>Carnegie Mellon University</b> , Pittsburgh, USA. Exchange Student during Fall 2016.  <b>National University of Singapore</b> , Singapore. Master of Computing, Infocomm Security, June 2013. GPA: 4.5 (<5.0)  <b>University of Moratuwa</b> , Sri Lanka. B. Sc. Eng., Electronic and Telecommunication Engineering, October 2010. Rank: 2nd, GPA: 4.10 (<4.20)	
RESEARCH EXPERIENCE	<b>Postdoctoral Researcher, Singapore Management University</b> <i>Advised by: Prof. Archan Misra.</i>	July 2019 - present
	<b>Visiting Scholar</b> <b>Computer Laboratory, University of Cambridge, United Kingdom.</b> <i>Advised by: Prof. Cecilia Mascolo.</i>	May 2017 - Aug 2017
	<b>Visiting Scholar</b> <b>Assistive Technology Group, Human-Computer Interaction Institute, Carnegie Mellon University, USA.</b> <i>Advised by: Dr. Jennifer Mankoff, Dr. Anind Dey.</i>	Aug 2016 - Dec 2016
	<b>Research Intern</b> <b>Situational Understanding Research Institute, US Army Research Laboratory, USA.</b> <i>Advised by: Prof. Tarek Abdelzaher (UIUC), Dr. Geeth de Mel (IBM Research).</i>	May 2015 - August 2015
	<b>Research Engineer</b> <b>Living Analytics Research Center, Singapore Management University, Singapore.</b> <i>Advised by: Dr. Archan Misra.</i>	July 2012 - July 2014
	<b>Graduate Student Researcher</b> <b>Interactive and Digital Media Institute, National University of Singapore, Singapore.</b> <i>Advised by: Dr. Owen Noel Fernando.</i>	Jan 2012 - March 2012

AWARDS AND HONORS	2020	Selected to participate in the prestigious <b>Rising Stars in EECS 2020</b> , early career workshop.	
	2019	<b>Gaetano Borriello Outstanding Student Award (one of 5 Finalists worldwide)</b> , Presented at UbiComp 2019.	
	2018	<b>SMU Multidisciplinary Doctoral Fellowship</b> (awarded to top 5% of the PhD cohort)	
	2018	<b>Best Paper Award (PURBA 2018, co-located with UbiComp 2018)</b>	
	2017	<b>Google Women Techmakers Scholar (APAC)</b>	
	2017	<b>Honorable Mention, Open Mobility Task Challenge, co-located with ACM Conference on Information and Knowledge Management (CIKM) 2017</b>	
	2017	Travel grant to attend the Urban Data Drive at the <b>Alan Turing Institute, UK</b> .	
	2014 – 2018	<b>A*STAR Graduate Scholarship (AGS)</b> , Part of the first batch of SMU scholars to be awarded the AGS. A*STAR is Singapore's leading public sector agency for spearheading economy-oriented research in STEM	
	2012 – 2013	<b>O. N. M. Kulashethra Award for academic excellence</b> , University of Moratuwa	
	2013	<b>Winner of third prize, Hands on With Business Analytics</b> , NUS School of Computing Project Showcase	
	2011	<b>Certificate of Appreciation</b> , for spearheading the formation of the the Environment, Health and Safety Initiative, at Virtusa Corp.	
	2010	<b>Winner of Merit Award</b> . National Best Quality Software Awards, the British Computer Society, Sri Lankan Chapter	
TEACHING EXPERIENCE	Adjunct Faculty	Fall 2020	<b>Computer as an Analysis Tool (UG Course)</b> , Singapore Management University
	Guest Lecturer	Fall 2019/Fall 2018	<b>Mobile and Distributed Systems (PG Course)</b> , Singapore Management University
	Teaching Assistant	Spring 2017	<b>Advanced Research Topics (PG Course)</b> , Singapore Management University
GRANTS	Under-Review	2020	<b>Real-Time Monitoring of Students' Cognitive States and Engagement for In-Class and Remote Learning Environments</b> <i>Spencer Foundation. (Role: Principal Investigator, with Dr. Swapna Gotipati as Co-PI)</i>
	Awarded	2019	<b>The Role of Urban Mobility in Retail Viability</b> <i>TRANS Grant for translational research (Grant amount SGD 500,000). The proposal extends my work in [J1].</i>
ARTICLES UNDER REVIEW AND PREPRINTS	R. Gupta, S. Mukherjee and <b>K. Jayarajah</b> , The Role of Group Cohesiveness in Targeted Mobile Promotions, <b>Conditionally Accepted</b> to the Journal of Business Research (Special Issue on Mobile Applications), 2020. <b>Impact Factor 4.874</b> .		
	<b>K. Jayarajah</b> , D. Wanniarachchige and A. Misra, The Case for Collaborative Video Sensing at the Edge, <i>Under Review</i> .		
	<b>K. Jayarajah</b> , D. Wanniarachchige and A. Misra, Collaborative Video Sensing at the Edge through Convolutional Sharing, arXiv preprint arXiv:2012.08643, 2020.		

[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**.

**Acceptance Rate  $\approx$  20–25%**

[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  $\approx$  20–25%**

[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)*.

[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**.

[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**.

[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%**

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

[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*.

[P6] **Jayarajah, K.**, V. Subbaraju, N. Athaide, L. Meegahapola, A.Tan and A. Misra. Can multi-modal 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*.

[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)*.

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

[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).

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

[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.

[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

<b>Reviewer</b>	2017 - 2020	PACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT) - [ <b>Special Recognition for Outstanding Review × 1</b> ]
<b>Reviewer</b>	2019 - 2020	ACM CSCW
<b>Reviewer</b>	2020	ACM TOIT, AAAI ICWSM, Elsevier PMC, IEEE TKDE, MobileHCI
<b>Reviewer</b>	2019	ACM ISWC, ACM UIST, CHI'19 Late Breaking Work
<b>Reviewer</b>	2016	IEEE Transactions on Mobile Computing
<b>TPC</b>	2020	ACM IoTDI
<b>TPC</b>	2018	ACM MobiSys Phd Forum
<b>TPC</b>	2017	ACM S3 Workshop (co-located with ACM MobiCom 2017)
<b>Web Director</b>	2017 - current	ACM SIGMOBILE
<b>Co-SV Chair</b>	2018	UbiComp
<b>Co-Web Chair</b>	2018	UbiComp
<b>Co-Chair</b>	2016	Women's Workshop co-located with MobiSys 2016
<b>Co-Web Chair</b>	2016	14th ACM International Conference on Mobile Systems, Applications, and Services (MobiSys 2016)

<b>Board Member</b>	2015-2016	Networking Networking Women (An ACM SIGMOBILE program supported by IEEE COMSOC, IEEE TCCN, MSR, Google and HP Labs.
<b>Web Chair</b>	2016	17th International Conference on Distributed Computing and Networking. January, 2016
<b>Web Chair</b>	2015	2nd International Workshop on Physical Analytics, colocated with MobiSys'15. May, 2015
<b>Web Chair</b>	2015	4th ACM Workshop on Mobile Systems for Computational Social Science. September, 2015
<b>Founding Member</b>	2010	Environment, Health and Safety Initiative, Virtusa Corp.
<b>Member</b>	2008-2010	Electronic Club, University of Moratuwa

#### STUDENTS CO-MENTORED WITH ADVISOR

Manasa Kalanadhabhatta (Undergrad), Shiv Nadar University, India. January – May 2018.  
Dulanga Weerakoon (Undergrad), University of Moratuwa, Sri Lanka. December 2016 to February 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.

#### 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

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Vice Provost (Research)  
Singapore Management University  
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Prof. Anind Dey  
Dean, iSchool  
University of Washington  
anind@uw.edu

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

Prof. Tarek Abdelzaher  
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University of Illinois, Urbana Champaign  
zaher@illinois.edu