Kasthuri Jayarajah

CONTACT INFORMATION	Living Analytics Research Center Singapore Management University, Singapore 178902.	*Mobile:* (65) 9030 6257 *E-mail:* kasthurij@smu.edu.sg *URL:* https://kjayarajah.github.io/

RESEARCH INTERESTS

Mobile and Pervasive Computing, Deep Learning for Embedded Systems, Edge Computing, Smart Environments & Urban Analytics, Mobile Marketing, Social Computing.

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),
Rajesh Balan (SMU),
Ee-Peng Lim (SMU)

Carnegie Mellon University, Pittsburgh, USA.

Exchange Student during Fall 2016.

National University of Singapore, Singapore.

Master of Computing, Infocomm Security, June 2013. GPA: 4.5 ($<$5.0)

University of Moratuwa, Sri Lanka.

B. Sc. Eng., Electronic and Telecommunication Engineering, October 2010.
Rank: 2nd, GPA: 4.10 ($<$4.20)

RESEARCH EXPERIENCE

Postdoctoral Researcher, Singapore Management University   July 2019 - present
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
Assistive Technology Group, 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 Army Research Laboratory, USA.
Advised by: Prof. Tarek Abdelzaher (UIUC), Dr. Geeth de Mel (IBM Research).

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.

AWARDS AND HONORS	2020	Selected to participate in the prestigious **Rising Stars in EECS 2020**, early career workshop.
	2019	**Gaetano Borriello Outstanding Student Award (one of 5 Finalists worldwide)**, Presented at UbiComp 2019.
	2018	**SMU Multidisciplinary Doctoral Fellowship** (awarded to top 5% of the PhD cohort)
	2018	**Best Paper Award (PURBA 2018, co-located with UbiComp 2018)**
	2017	**Google Women Techmakers Scholar (APAC)**
	2017	**Honorable Mention, Open Mobility Task Challenge, co-located with ACM Conference on Infor-mation and Knowledge Management (CIKM) 2017**
	2017	Travel grant to attend the Urban Data Drive at the **Alan Turing Institute, UK.**
	2014 – 2018	**A*STAR Graduate Scholarship (AGS)**, 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	**O. N. M. Kulashesthra Award for academic excellence**, University of Moratuwa
	2013	**Winner of third prize, Hands on With Business Analytics**, NUS School of Computing Project Showcase
	2011	**Certificate of Appreciation**, for spearheading the formation of the the Environment, Health and Safety Initiative, at Virtusa Corp.
	2010	**Winner of Merit Award**. National Best Quality Software Awards, the British Computer Society, Sri Lankan Chapter
	2006	**Mahapola Scholarship**, awarded by the Government of Sri Lanka.

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

GRANTS	Under-Review	2020	**Real-Time Monitoring of Students' Cognitive States and Engagement for In-Class and Remote Learning Environments**
			Spencer Foundation. (Role: Principal Investigator, with Dr. Swapna Gottipati as Co-PI)
	Awarded	2019	**The Role of Urban Mobility in Retail Viability**
			TRANS Grant for translational research (Grant amount SGD 500,000). The proposal extends my work in [J1].

ARTICLES UNDER REVIEW AND PREPRINTS	**K. Jayarajah**, D. Wanniarachchige and A. Misra, Collaborative Video Sensing at the Edge through Convolutional Sharing, arXiv preprint arXiv:2012.08643, 2020.

PEER-REVIEWED
JOURNAL,
CONFERENCE &
WORKSHOP
PUBLICATIONS

[J4] R. Gupta, S. Mukherjee and **K. Jayarajah**, The Role of Group Cohesiveness in Targeted Mobile Promotions, To appear in the **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**.
Acceptance Rate ≈ 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 ≈ 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 - 2021	PACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT) - [**Special Recognition for Outstanding Review × 1**]
Reviewer	2019 - 2021	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	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

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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Dean, iSchool
Universiy of Washington
anind@uw.edu

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

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