

## Kasthuri Jayarajah

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| CURRENT APPOINTMENT | <b>Assistant Professor (Sep, 2023 - current).</b><br><b>New Jersey Institute of Technology.</b><br><i>Department of Computer Science</i>  |  |
| CONTACT INFORMATION | 4204 Guttenberg Information Technologies Center,<br>University Heights, NJ 07102.   | <i>E-mail:</i> <a href="mailto:kj373@njit.edu">kj373@njit.edu</a><br><br><i>URL:</i> <a href="https://kjayarajah.github.io/">https://kjayarajah.github.io/</a> |
| PAST APPOINTMENTS   | <b>Research Assistant Professor (Nov, 2021 - Aug, 2023).</b><br><b>University of Maryland, Baltimore County.</b><br><i>Center for Real-time Distributed Sensing and Autonomy</i>  |  |
|                     | <b>Research Fellow, Singapore Management University</b><br><i>Advised by: Prof. Archan Misra.</i>   | July 2019 - Oct 2021   |
|                     | <b>Visiting Scholar</b><br><b>Computer Laboratory, University of Cambridge, United Kingdom.</b><br><i>Advised by: Prof. Cecilia Mascolo.</i>  | May 2017 - Aug 2017  |
|                     | <b>Visiting Scholar</b><br><b>Human-Computer Interaction Institute, Carnegie Mellon University, USA.</b><br><i>Advised by: Dr. Jennifer Mankoff, Dr. Anind Dey.</i>   | Aug 2016 - Dec 2016  |
|                     | <b>Research Intern</b><br><b>Situational Understanding Research Institute, US Airforce Research Laboratory, USA.</b><br><i>Advised by: Michael Kolodny (ARL), Prof. Tarek Abdelzaher (UIUC), Dr. Geeth de Mel (IBM Research), Julie Skipper and Rob Williams (AFRL Discovery Lab).</i>  | May 2015 - August 2015   |
|                     | <b>Research Engineer</b><br><b>Living Analytics Research Center, Singapore Management University, Singapore.</b><br><i>Advised by: Dr. Archan Misra.</i>  | July 2012 - July 2014  |
|                     | <b>Graduate Student Researcher</b><br><b>Interactive and Digital Media Institute, National University of Singapore, Singapore.</b><br><i>Advised by: Dr. Owen Noel Fernando.</i>  | Jan 2012 - March 2012  |
| INTERESTS           | Mobile and Ubiquitous Computing, AI for IoT, Human-Autonomy Teaming   |  |
| EDUCATION           | <b>Singapore Management University, Singapore.</b><br>PhD in Information Systems, 2014 - 2019.<br><u>Advisors:</u> Dr. Archan Misra (SMU), Dr. Shili Xiang (A*STAR).<br><u>Thesis Title:</u> <b>Exploiting Mobility for Predictive Urban Systems.</b><br><u>Committee:</u> Anind Dey (Dean, iSchool, University of Washington),<br>Ramayya Krishnan (Dean, Heinz College, Carnegie Mellon University),<br><br><b>Carnegie Mellon University, Pittsburgh, USA (Fall, 2016).</b><br><b>National University of Singapore, Master of Computing, 2012-2013.</b><br><b>University of Moratuwa, Sri Lanka, B. Sc. Eng., Electronic and Telecommunication Eng., 2010.</b> |  |

## GRANTS

**Principal Investigator**, NJIT/Institute for Future Technologies, “Towards Improving the Effectiveness of Socially Assistive Robots through Wearable Sensing” with Shelly Levy-Tzedek (BGU), 2024-2026.

**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

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|-------------|---|
| 2020        | Named a <b>Rising Star in EECS 2020</b> by UC Berkeley (the only awardee from Singapore).                           |
| 2019        | Finalist, <b>Gaetano Borriello Outstanding Student Award (one of only 5 worldwide)</b> , Presented at UbiComp 2019. |
| 2018        | <b>SMU Multidisciplinary Doctoral Fellowship</b> (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> (one of 5 awardees from Singapore)                                    |
| 2017        | <b>Honorable Mention, Open Mobility Task Challenge, ACM CIKM 2017</b>   |
| 2014 – 2018 | <b>A*STAR Graduate Scholarship (AGS)</b>  |
| 2012 – 2013 | <b>O. N. M. Kulashethra Award for academic excellence</b> , University of Moratuwa                                  |

## PEER-REVIEWED JOURNAL, CONFERENCE & WORKSHOP PUBLICATIONS

[C21] D. Wanniarachchige, **K. Jayarajah**, D. Weerakoon, T. Abdelzaher, and N. Roy (2025). SteerCam: Multi-Camera Edge Perception via Dynamic Joint Steering & Collaboration, In Proceedings of the IEEE International Conference on Computer Communications, 2026. **(INFOCOM 2026 (Upcoming))**. **Core Ranking A\*, Acceptance Rate 19.2%**.

[C20] I. Ghosh, M. Anwar, **K. Jayarajah**, and N. Roy (2025). Imitation-Inspired Semantic-Guided Distillation for User-Conditioned Memorability Prediction, In Proceedings of the 25th IEEE International Conference on Data Mining. **(ICDM 2025)**. **Core Ranking A\*, Acceptance Rate 13.5%**.

[C19] I. Ghosh, **K. Jayarajah**, N. Waytowich, N. Roy (2025). Augmenting Personalized Memory via Practical Multimodal Wearable Sensing in Visual Search and Wayfinding Navigation, In Proceedings of the 33rd ACM Conference on User Modeling, Adaptation and Personalization. **ACM UMAP 2025**.

[W12] C. Myrick, I. Ghosh, **K. Jayarajah**, N. Roy (2025), CALM: Multimodal Cognitive Load Assessment Framework via Engineered and Explainable Features. PerCom Workshops 2025.

[W11] M. Thavendra and **K. Jayarajah** (2025). GazeLight: Understanding the Feasibility of Gaze-based Adaptive Streaming for AR-Mediated Human-Robot Systems. PerCom Workshops 2025.

[C18] I. Ghosh, **K. Jayarajah**, N. Waytowich, N. Roy (2024). EEGAmp+: Investigating the Efficacy of Functional Connectivity for Detecting Events in Low-Resolution EEG, In Proceedings of the 21st EAI International Conference on Mobile and Ubiquitous Systems: Computing, Networking

and Services. **EAI MobiQuitous 2024.**

[C17] I. Ghosh, G. Chugh, **K. Jayarajah**, N. Roy (2024).  $\beta$ -Decode: Attention-based Decoding Temporal Artifacts via Unsupervised  $\beta$ -Variational Autoencoder, In Proceedings of the ACM 8th Joint International Conference on Data Science & Management of Data (12th ACM IKDD CODS and 30th COMAD, 2024).

[C16] Rippey, K., Gangopadhyay, A., **Jayarajah, K.** (2024). GestRight: Understanding the Feasibility of Gesture-driven Tele-Operation in Human-Robot Teams. 2024 IEEE/RSJ International Conference on Intelligent Robots and Systems. **IROS'24, Core Ranking A\***

[C15] Ahmed, M., Hasan, Z., Faridee, A. Z. M., Anwar, M. S., **Jayarajah, K.**, Purushotham, S., & Roy, N. (2024, April). ARSFineTune: On-the-Fly Tuning of Vision Models for Unmanned Ground Vehicles. In Proc. of Conference on Distributed Computing in Smart Systems and the Internet of Things. **IEEE DCROSS-IOT'24.**

[C14] Anwar, M. S., Dey, E., Devnath, M. K., Ghosh, ... , **Jayarajah. K.**, Ramamurthy, S., Roy, N. (2023, September). Heteroedge: Addressing asymmetry in heterogeneous collaborative autonomous systems. In 2023 IEEE 20th International Conference on Mobile Ad Hoc and Smart Systems (MASS) (pp. 575-583). IEEE.

[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  $\approx$  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. Ja-**

**yarajah**, 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%**

[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 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*.

[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

|                         |                |  |
|-------------------------|----------------|--|
| <b>Associate Editor</b> | 2024, 2025     | IROS   |
| <b>Associate Editor</b> | 2024           | IEEE Transactions on Mobile Computing  |
| <b>TPC</b>              | 2025, 2026     | IEEE PerCom, ACM HotMobile, ACM MobiSys  |
| <b>TPC</b>              | 2024           | ACM MobiSys, EWSN, ACM BodySys Workshop  |
| <b>TPC</b>              | 2022           | ACM MobiSys  |
| <b>TPC</b>              | 2022           | ACM ICDCN  |
| <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>Reviewer</b>         | 2017 - 2023    | PACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT) - [ <b>Special Recognition for Outstanding Review</b> × 1] |
| <b>Reviewer</b>         | 2019 - 2022    | ACM CSCW, AAAI ICWSM   |
| <b>Reviewer</b>         | 2020           | ACM TOIT, 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>Web Director</b>     | 2017 - current | ACM SIGMOBILE  |
| <b>Co-SV Chair</b>      | 2018, 2021     | UbiComp  |
| <b>Co-Web Chair</b>     | 2016, 2021     | MobiSys  |
| <b>Co-Web Chair</b>     | 2018           | UbiComp  |
| <b>Co-Chair</b>         | 2016           | Women's Workshop co-located with MobiSys 2016  |

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|------------------------|-----------|---|
| <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   |

#### TEACHING EXPERIENCE

|                    |                                   |  |
|--------------------|-----------------------------------|--|
| Instructor         | Fall'24                           | <b>Mobile Computing and Sensor Networks, NJIT</b>                                  |
| Instructor         | Spring'24                         | <b>Android App Development, NJIT</b>   |
| Instructor         | Fall'23                           | <b>Special Topics: Mobile Sensing and Applications, NJIT</b>                       |
| Adjunct Faculty    | Spring'21,<br>Fall'20             | <b>Computer as an Analysis Tool (UG Course), Singapore Management University</b>   |
| Guest Lecturer     | Spring'21,<br>Fall'19,<br>Fall'18 | <b>Mobile and Distributed Systems (PG Course), Singapore Management University</b> |
| Teaching Assistant | Spring 2017                       | <b>Advanced Research Topics (PG Course) , Singapore Management University</b>      |

#### STUDENT MENTORING

Akhitha Senith (Phd), NJIT, Primary Advisor. September 2024 onwards  
Mayooran Thavendra (Phd), NJIT, Primary Advisor. September 2023 onwards  
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.

#### 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.