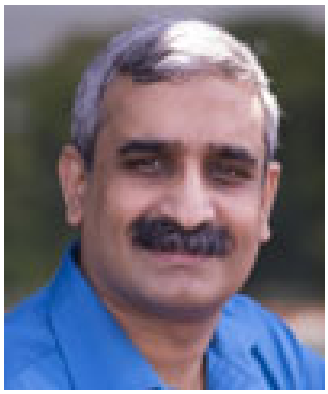
Rajesh Krishna BALAN

School of Computing and Information Systems
Singapore Management University (SMU)
80 Stamford Road
Singapore 178902

Email: rajesh@smu.edu.sg
Office Phone: (+65) 68280879



Education

PhD, Carnegie Mellon University, United States of America, 2006

Master of Science, National University of Singapore, Singapore, 2000

Bachelor of Science, National University of Singapore, Singapore, 1998

Academic Appointments

Professor of Computer Science, School of Computing and Information Systems, SMU, Jan 2024 - Present

Associate Professor of Computer Science, School of Computing and Information Systems, SMU, Apr 2021 - Dec 2023

Associate Professor of Information Systems, School of Computing and Information Systems, SMU, Jul 2013 - Mar 2021

Assistant Professor of Information Systems, School of Computing and Information Systems, SMU, Jul 2006 - Jun 2013

Academic Administrative Positions

Director, LiveLabs Urban Lifestyle Innovation Platform, Livelabs Urban Lifestyle Innovation Platform, SMU, Jul 2015 - Mar 2019

Co-Director, LiveLabs Urban Lifestyle Innovation Platform, Livelabs Urban Lifestyle Innovation Platform, SMU, Jul 2012 - Jun 2015

Awards and Honors

ACM Distinguished Member, Association for Computing Machinery, 2018

RESEARCH

Research Interests

Mobile and pervasive computing
Operating systems
Distributed computing
Software engineering
Usability of software systems
Usability testing
Networking

Publications

Journal Articles [Refereed]

Exploring key factors influencing depressive symptoms among middle-aged and elderly adult population: A machine learning-based method, by TRAN, Thu; TAN, Yi Zhen; LIN, Sapphire; ZHAO, Fang; NG, Yee Sien; MA, Dong; KO, Jeonggil; BALAN, Rajesh. (2025). *Archives of Gerontology and Geriatrics, 129* 1-9. https://doi.org/10.1016/j.archger.2024.105647 (Published)

W4-Groups: Modeling the who, what, when and where of group behavior via mobility sensing, by ATREY, Akansha; ZAKARIA, Camellia; BALAN, Rajesh; SHENOY, Prashant. (2024). *Proceedings of the ACM on Human-Computer Interaction, 8* 1-29. https://doi.org/10.1145/3637427 (Published)

ClearSpeech: Improving voice quality of earbuds using both in-ear and out-ear microphones, by MA, Dong; DANG, Ting; DING, Ming; BALAN, Rajesh K.. (2024). *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies, 7* (4), (Published)

Tracking people across ultra populated indoor spaces by matching unreliable Wi-Fi signals with disconnected video feeds, by TRUONG, Hai; JAISINGHANI, Dheryta; JAIN, Shubham; SINHA, Arunesh; KO, Jeong Gil; BALAN, Rajesh. (2024). *Pervasive and Mobile Computing, 97* 1-20. https://doi.org/10.1016/j.pmcj.2023.101860 (Published)

Remote multi-person heart rate monitoring with smart speakers: Overcoming separation constraint, by TRAN, Thu; MA, Dong; BALAN, Rajesh. (2024). *Sensors, 24* (2), 1-19. https://doi.org/10.3390/s24020382 (Published)

SleepMore: Inferring Sleep Duration at Scale via Multi-Device WiFi Sensing, by ZAKARIA, Camellia; YILMAZ, Gizem; MAMMEN, Priyanka; CHEE, Michael; SHENOY, Prashant; BALAN, Rajesh. (2022). *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies, 6* (4), 1-32. https://doi.org/10.1145/3569489 (Published)

Analyzing the Impact of COVID-19 Control Policies on Campus Occupancy and Mobility viaWiFi Sensing, by ZAKARIA, Camellia; TRIVEDI, Amee; CECCHET, Emmanuel; CHEE, Michael; SHENOY, Prashant; BALAN, Rajesh Krishna. (2022). *ACM Transactions on Spatial Algorithms and Systems, 8* (3), 1-26. https://doi.org/10.1145/3516524 (Published)

W8-Scope: Fine-grained, practical monitoring of weight stack-based exercises, by RADHAKRISHNAN, Meera; MISRA, Archan; BALAN, Rajesh Krishna. (2021). *Pervasive and Mobile Computing, 75* 1-20. https://doi.org/10.1016/j.pmcj.2021.101418 (Published)

WiFiTrace: Network-based Contact Tracing for Infectious Diseases Using Passive WiFi Sensing, by TRIVEDI, Amee; ZAKARIA, Camellia; BALAN, Rajesh; BECKER, Ann; COREY, George; SHENOY, Prashant

. (2021). *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies, 5* (1), 1-26. (Published)

Simultaneous Material Identification and Target Imaging with Commodity RFID Devices, by WANG, Ju; XIONG, Jie; CHEN, Xiaojiang; JIANG, Hongbo; BALAN, Rajesh Krishna; FANG, Dingyi. (2021). *IEEE Transactions on Mobile Computing, 20* (2), 739-753. (Published)

iMon: Appearance-based Gaze Tracking System on Mobile Devices, by HUYNH, Sinh; BALAN, Rajesh Krishna; KO, JeongGil. (2021). *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous*

Technologies, 5 (4), 1-26. (Published)

Detection of social identification in workgroups from a passively-sensed WiFi infrastructure, by ZAKARIA, Camellia; LEE, Youngki; BALAN, Rajesh. (2021). *Proceedings of the ACM on Human-Computer Interaction, 5* (CSCW1), 1-19. https://doi.org/10.1145/3449145 (Published)

Annapurna: An automated smartwatch-based eating detection and food journaling system, by SEN, Sougata; SUBBARAJU. Vigneshwaran; MISRA, Archan; BALAN, Rajesh, LEE, Youngki. (2020). *Pervasive and Mobile Computing, 68* 1-19. https://doi.org/10.1016/j.pmcj.2020.101259 (Published)

HeartQuake: Accurate Low-Cost Non-Invasive ECG Monitoring Using Bed-Mounted Geophones, by PARK, Jaeyeon; CHO, Hyeon; BALAN, Rajesh Krishna; KO, JeongGil. (2020). *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies, 4* (3), 93:1-93:28. https://doi.org/10.1145/3411843 (Published)

StressMon: Scalable detection of perceived stress and depression using passive sensing of changes in work routines and group interactions, by ZAKARIA, Camellia; BALAN, Rajesh Krishna; LEE, Youngki. (2019). *Proceedings of the ACM on Human-Computer Interaction, 3* 37:1-29. https://doi.org/10.1145/3359139 (Published)

New Challenges in Display-Saturated Environments, by MIKUSZ, Mateusz; CHOO, Kenny Tsu Wei; BALAN, Rajesh Krishna; DAVIES, Nigel; LEE, Youngki. (2019). *IEEE Pervasive Computing, 18* (2), 67-75. https://doi.org/10.1109/MPRV.2019.2906992 (Published)

FocusVR: Effective and usable VR display power management, by TAN, Kiat Wee; CUERVO, Eduardo; BALAN, Rajesh Krishna. (2018). *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies, 2* (3), 142:1-25. https://doi.org/10.1145/3264952 (Published)

Finding Small-Bowel Lesions: Challenges in Endoscopy-Image-Based Learning Systems, by AHN, Jungmo; HUYNH, Loc Nguyen; BALAN, Rajesh Krishna; LEE, Youngki; KO, JeongGil. (2018). *Computer, 51* (5), 68-76. https://doi.org/10.1109/MC.2018.2381116 (Published)

EngageMon: Multi-modal engagement sensing for mobile games, by HUYNH, Sinh; KIM, Seungmin; KO, JeongGil; BALAN Rajesh Krishna; LEE, Youngki. (2018). *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies, 2* (1), 13:1-27. https://doi.org/10.1145/3191745 (Published)

Cyber Foraging: Fifteen Years Later, by BALAN, Rajesh Krishna; FLINN, Jason. (2017). *IEEE Pervasive Computing, 16* (3), 24-30. https://doi.org/10.1109/MPRV.2017.2940972 (Published)

Cloud-based query evaluation for energy-efficient mobile sensing, by MO, Tianli; LIM, Lipyeow; SEN, Sougata; MISRA, Archan; BALAN, Rajesh Krishna; LEE, Youngki. (2017). *Pervasive and Mobile Computing, 38* (1), 257-274. https://doi.org/10.1016/j.pmcj.2016.12.005 (Published)

LiveLabs: Initial reflections on building a large-scale mobile behavioral experimentation testbed, by MISRA, Archan; BALAN, Rajesh Krishna. (2013). *ACM SIGMOBILE Mobile Computing and Communications Review, 17* (4), 47-59. http://doi.org/10.1145/2557968.2557975 (Published)

ARIVU: Making Networked Mobile Games Green A Scalable Power-Aware Middleware, by BHOJAN, Anand; Akhihebbal L., Ananda L.; CHAN, Mun Choon; BALAN, Rajesh Krishna. (2012). *Mobile Networks and Applications, 17* (1), 21-28. http://dx.doi.org/10.1007/s11036-011-0312-8 (Published)

The Digital Wallet: Opportunities and Prototypes, by BALAN, Rajesh Krishna; RAMASUBBU, Narayanasamy. (2009). *Computer, 42* (4), 100-102. http://dx.doi.org/10.1109/MC.2009.134 (Published)

Powerful change part 2: Reducing the power demands of mobile devices, by BALAN, Rajesh Krishna. (2004). *IEEE Pervasive Computing, 3* (2), 71-73. https://doi.org/10.1109/mprv.2004.1316822 (Published)

Avoiding congestion collapse on the Internet using TCP tunnels, by LEE, Boon Peng; BALAN, Rajesh Krishna; LILLYKUTTY, Jacob; SEAH, Winston; ANANDA, A. L.. (2002). *Computer Networks, 39* (2), 207-219. https://doi.org/10.1016/s1389-1286(01)00311-5 (Published)

TCP HACK: a mechanism to improve performance over lossy links, by BALAN, Rajesh Krishna; LEE, Boon Peng; KUMAR, Renjish; Lillykutty, Jacob; Seah, Winston; Ananda, A. L.. (2002). *Computer Networks, 39* (4), 347-361. http://dx.doi.org/10.1016/s1389-1286(01)00310-3 (Published)

Multi-modal network Protocols, by BALAN, Rajesh Krishna; Akella, Aditya; Seshan, Srini. (2002). *Computer Communication Review, 32* (1), 60-60. http://dx.doi.org/10.1145/510726.510734 (Published)

Conference Proceedings

GradualReality : Enhancing physical object interaction in virtual reality via interaction state-aware blending
, by SEO, HyunA; YI, Juheon; BALAN, Rajesh; LEE, Youngki
. (2024.0). *Proceedings of the 37th Annual ACM Symposium on User Interface Software and Technology (UIST 2024) : Pittsburgh, PA, USA, October 13-16,* (pp. 1-14) New York, NY, USA: Association for Computing Machinery. https://doi.org/10.1145/3654777.3676463 (Published)

How is our mobility affected as we age? Findings from a 934 users field study of older adults conducted in an urban Asian city, by TAN, Yi Zhen; TRAN, Thu; LIN, Sapphire; ZHAO, Fang; NG, Yee Sien; MA, Dong; KO, JeongGil; BALAN, Rajesh. (2024.0). *BTIW '24: Proceedings of the Behavior Transformation by IoT International Workshop, Minato-ku, Tokyo, June 3-7,* (pp. -27) New York: ACM. https://doi.org/10.1145/3662008.3662016 (Published)

Applicability and challenges of indoor localization using one-sided round trip time measurements, by TRUONG, Hai; LAM, Justin Xi Kai; ANISH, Guru Anand; BALAN, Rajesh Krishna. (2024.0). *BodySYS '24: Proceedings of the 10th Workshop on Body-Centric Computing Systems, Tokyo, June 3-7,* (pp. 1-6) New York: ACM. https://doi.org/10.1145/3662009.3662017 (Published)

Analyzing swimming performance using drone captured aerial videos, by TRAN, Thu; CHOO, Kenny Tsu Wei; FOONG, Shaohui; BHARDWAJ, Hitesh; WIN, Shane Kyi Hla; ANG, Wei Jun; GOH, Kenneth; BALAN, Rajesh Krishna. (2024.0). *Proceedings of the 10th Workshop on Micro Aerial Vehicle Networks, Systems, and Applications in the 22nd Annual International Conference on Mobile Systems, Applications and Services (MOBISYS 2024), Tokyo, Japan, Jun 3-7,* (pp. 7-12) New York, NY USA: Association for Computing Machinery. https://doi.org/10.1145/3661810.36634 (Published)

Bubbleu: Exploring augmented reality game design with uncertain AI-based interaction, by KIM, Minji; LEE, Kyungjin; BALAN, Rajesh; LEE, Youngki. (2023.0). *CHI '23: Proceedings of the the ACM CHI Conference on Human Factors in Computing Systems, Hamburg, April 23-28,* (pp. 1-18) New York: ACM. https://doi.org/10.1145/3544548.3581270 (Published)

Gym usage behavior & desired digital interventions: An empirical study, by RADHAKRISHNAN, Meera; MISRA, Archan; BALAN, Rajesh; LEE, Youngki. (2020.0). *Proceedings of EAI 14th International Conference on Pervasive Computing Technologies for Healthcare, Cyberspace, 2020 October 6-8,* Cyberspace: https://doi.org/10.1145/3421937.3422023 (Published)

W8-Scope: Fine-grained, practical monitoring of weight stack-based exercises, by RADHAKRISHNAN, Meera; MISRA, Archan; BALAN, Rajesh Krishna. (2020.0). *2020 IEEE International Conference on Persuasive Computing and Communications (PerCom): March 23-27, Austin, TX: Proceedings,* (pp. 1-10) Piscataway, NJ: IEEE. https://doi.org/10.1109/PerCom45495.2020.9127379 (Published)

VitaMon: Measuring heart rate variability using smartphone front camera, by HUYNH, Sinh; BALAN, Rajesh Krishna; KO, JeongGil; LEE, Youngki. (2019.0). *SenSys '19: Proceedings of the 17th Conference on Embedded Networked Sensor Systems, New York, November 10-13,* (pp. 1-14) New York: ACM. https://doi.org/10.1145/3356250.3360036 (Published)

Exploratory analysis of individuals' mobility patterns and experienced conflicts in workgroup, by ZAKARIA, Camellia; GOH, Kenneth; LEE, Youngki; BALAN, Rajesh Krishna. (2019.0). *MCSS '19: Proceedings of the 5th ACM Workshop on Mobile Systems for Computational Social Science, Seoul, June 21,* (pp. 27-31) New York: ACM. https://doi.org/10.1145/3325426.3329946 (Published)

LPGL: Low-power graphics library for mobile AR headsets, by CHOI Jaewon; PARK, Hyeonjung; PAEK, Jeongyeup; BALAN, Rajesh Krishna; KO, JeongGil. (2019.0). *MobiSys '19: Proceedings of the 17th Annual International Conference on Mobile Systems, Applications, and Services, Seoul, June 17-21,* (pp. 155-167) New York: ACM. https://doi.org/10.1145/3307334.3326097 (Published)

Examining augmented virtuality impairment simulation for mobile app accessibility design, by CHOO, Tsu Wei Kenny; BALAN, Rajesh Krishna; LEE, Youngki. (2019.0). *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems, Glasgow, United Kingdom, 2019 May 4-9,* (pp. 1-11) Glasgow, United Kingdom: https://doi.org/10.1145/3290605.3300605 (Published)

Design and assessment of myoelectric games for prosthesis training of upper limb amputees, by RADHAKRISHNAN, Meera; SMAILAGIC, Asim; FRENCH, Brian; SIEWIOREK, Daniel P.; BALAN, Rajesh

Krishna. (2019.0). *2019 IEEE International Conference on Pervasive Computing and Communications Workshops: Kyoto, March 11-15: Proceedings,* (pp. 151-157) Piscataway, NJ: IEEE. https://doi.org/10.1109/PERCOMW.2019.8730824 (Published)

CryptoCurrency mining on mobile as an alternative monetization approach, by HUYNH, Sinh; CHOO, Kenny Tsu Wei; BALAN, Rajesh Krishna; LEE, Youngki. (2019.0). *Proceedings of the 20th International Workshop on Mobile Computing Systems and Applications, Santa Cruz, CA, 2019 February 27-28,* (pp. 51-56) Santa Cruz: Association for Computing Machinery, Inc. https://doi.org/10.1145/3301293.3302372 (Published)

Experiences & challenges with server-side WiFi indoor localization using existing infrastructure, by JAISINGHANI, Dheryta; BALAN, Rajesh Krishna; NAIK, Vinayak; MISRA, Archan; LEE, Youngki. (2018.0). *MobiQuitous '18: Proceedings of the 15th EAI International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services, New York, November 5-7,* (pp. 1-10) New York: ACM. https://doi.org/10.1145/3286978.3286989 (Published)

FogFly: A traffic light optimization solution based on fog computing, by MINH, Quang Tran; TRAN, Chanh Minh; LE, Tuan An; NGUYEN, Binh Thai; TRAN, Triet Minh; BALAN, Rajesh Krishna. (2018.0). *UbiComp '18: Proceedings of the 2018 ACM International Joint Conference and 2018 International Symposium on Pervasive and Ubiquitous Computing and Wearable Computers, Singapore, October 8-12,* (pp. 1130-1139) New York: ACM. https://doi.org/10.1145/3267305.3274169 (Published)

I4S: Capturing shopper’s in-store interactions, by SEN, Sougata; MISRA, Archan; SUBBARAJU, Vigneshwaran; GROVER, Karan; RADHAKRISHNAN, Meera; BALAN, Rajesh Krishna; LEE, Youngki. (2018.0). *ISWC '18: Proceedings of the 2018 ACM International Symposium on Wearable Computers, Singapore, October 8-12,* (pp. 156-159) New York: ACM. https://doi.org/10.1145/3267242.3267259 (Published)

Empath-D: VR-based empathetic app design for accessibility, by KIM, Wonjung; CHOO, Kenny Tsu Wei; LEE, Youngki; MISRA, Archan; BALAN, Rajesh Krishna. (2018.0). *MobiSys '18: Proceedings of the 16th Annual International Conference on Mobile Systems, Applications, and Services, Munich, Germany, June 10-15,* (pp. 123-135) New York: ACM. https://doi.org/10.1145/3210240.3210331 (Published)

D-pruner: Filter-based pruning method for deep convolutional neural network, by HUYNH, Loc N.; LEE, Youngki; BALAN, Rajesh Krishna. (2018.0). *EMDL'18: Proceedings of the 2nd International Workshop on Embedded and Mobile Deep Learning, Munich, Germany, June 15,* (pp. 7-12) New York: ACM. https://doi.org/10.1145/3212725.3212730 (Published)

Annapurna: Building a real-world smartwatch-based automated food journal, by SEN, Sougata; SUBBARAJU, Vigneshwaran; MISRA, Archan; BALAN, Rajesh Krishna; LEE, Youngki. (2018.0). *WOWMOM 2018: Proceedings of the 19th IEEE International Symposium on A World of Wireless, Mobile and Multimedia Networks, Chania, Crete, Greece, June 12-15,* (pp. 1-6) Los Alamitos, CA: IEEE Computer Society. https://doi.org/10.1109/WoWMoM.2018.8449755 (Published)

Smart monitoring via participatory BLE relaying, by RADHAKRISHNAN, Meera; SEN, Sougata; MISRA, Archan; LEE, Youngki; BALAN, Rajesh Krishna. (2018.0). *2018 10th International Conference on Communication Systems & Networks (COMSNETS): Bengaluru, India, January 3-7: Proceedings,* (pp. 312-319) Piscataway, NJ: IEEE. https://doi.org/10.1109/COMSNETS.2018.8328213 (Published)

TagScan: Simultaneous target imaging and material identification with commodity RFID devices, by WANG, Ju; XIONG, Jie; CHEN, Xiaojiang; JIANG, Hongbo; BALAN, Rajesh Krishna; FANG, Dingyi. (2017.0). *MobiCom '17: Proceedings of the 23rd Annual International Conference on Mobile Computing and Networking, Snowbird, UT, October 16-20,* (pp. 288-300) New York: ACM. https://doi.org/10.1145/3117811.3117830 (Published)

DeepMon: Mobile GPU-based deep learning framework for continuous vision applications, by HUYNH, Loc Nguyen; LEE, Youngki; BALAN, Rajesh Krishna. (2017.0). *MobiSys '17: Proceedings of the 15th Annual International Conference on Mobile Systems, Applications, and Services, Niagara Falls, June 19-23,* (pp. 82-95) New York: ACM. https://doi.org/10.1145/3081333.3081360 (Published)

Experiences in building a real-world eating recogniser, by SEN, Sougata; SUBBARAJU, Vigneshwaran; MISRA, Archan; BALAN, Rajesh Krishna; LEE, Youngki. (2017.0). *WPA '17: Proceedings of the 4th International on Workshop on Physical Analytics, Niagara Falls, June 19,* (pp. 7-12) New York: ACM. http://doi.org/10.1145/3092305.3092306 (Published)

Empath-D: Empathetic design for accessibility, by CHOO, Kenny Tsu Wei; BALAN, Rajesh Krishna; TAN, Kiat Wee; MISRA, Archan; LEE, Youngki. (2017.0). *HotMobile '17: Proceedings of the 18th International*

Workshop on Mobile Computing Systems and Applications, Sonoma, CA, February 21-22, (pp. 55-60) New York: ACM. https://doi.org/10.1145/3032970.3032981 (Published)

DeepSense: A GPU-based deep convolutional neural network framework on commodity mobile devices, by HUYNH, Loc Nguyen; BALAN, Rajesh Krishna; LEE, Youngki. (2016.0). *WearSys'16: Proceedings of the 2016 Workshop on Wearable Systems and Applications: June 30, 2016, Singapore,* (pp. 25-30) New York: ACM. http://doi.org/10.1145/2935643.2935650 (Published)

Small scale deployment of seat occupancy detectors, by HUY, Nguyen Huy Hoang; HETTIARACHCHI, Gihan; LEE, Youngki; BALAN, Rajesh Krishna. (2016.0). *WPA '16: Proceedings of the 3rd International on Workshop on Physical Analytics: Singapore, June 26,* (pp. 25-30) New York: ACM. https://doi.org/10.1145/2935651.2935660 (Published)

LiveLabs: Building in-situ mobile sensing & behavioural experimentation testbeds, by JAYARAJAH, Kasthuri; BALAN, Rajesh Krishna; RADHAKRISHNAN, Meera; MISRA, Archan; LEE, Youngki. (2016.0). *Mobisys '16: Proceedings of the 14th International Conference on Mobile Systems, Applications, and Services, Singapore, 25-30 June,* (pp. 1-15) New York: ACM. https://doi.org/10.1145/2906388.2906400 (Published)

Jasper: Sensing gamers' emotions using physiological sensors, by HUYNH, Sinh; LEE, Youngki; PARK, Taiwoo; BALAN, Rajesh. (2016.0). *MobiGames '16: Proceedings of the 3rd Workshop on Mobile Gaming, Singapore, June 30,* (pp. 1-6) New York: ACM. https://doi.org/10.1145/2934646.2934648 (Published)

Demo: Smartwatch based shopping gesture recognition, by RADHAKRISHNAN, Meeralakshmi; ESWARAN, Sharanya; SEN, Sougata; SUBBARAJU, Vigneswaran; MISRA, Archan; BALAN, Rajesh Krishna. (2016.0). *MobiSys 2016 Companion: Proceedings of the 14th Annual International Conference on Mobile Systems, Applications, and Services: Singapore, June 25-30,* (pp. 115-115) New York: ACM. https://doi.org/10.1145/2938559.2938572 (Published)

Graph-aided directed testing of Android applications for checking runtime privacy behaviours, by CHAN, Joseph Joo Keng; JIANG, Lingxiao; TAN, Kiat Wee; BALAN, Rajesh K.. (2016.0). *AST 2016: Proceedings of the 11th International Workshop on Automation of Software Test, Austin, Texas, 14-15 May,* (pp. 57-63) New York: ACM. https://doi.org/10.1145/2896921.2896930 (Published)

Leveraging automated privacy checking for design of mobile privacy protection mechanisms, by CHAN, Joseph Joo Keng; JIANG, Lingxiao; TAN, Kiat Wee; BALAN, Rajesh. (2016.0). *CHI 2016: The 34th Annual CHI Conference on Human Factors in Computing Systems: San Jose, CA, May 7-12,* (pp. 1-4) New York: ACM. (Published)

IoT+Small Data: Transforming in-store shopping analytics and services, by RADHAKRISHNAN, Meera; SEN, Sougata; SUBBARAJU, Vigneshwaran; MISRA, Archan; BALAN, Rajesh. (2016.0). *2016 8th International Conference on Communication Systems and Networks: COMSNETS 2016, Bangalore, India, January 5-10 [COMSNETS Workshop: Wild and Crazy Ideas on the interplay between IoT and Big Data WACI],* Piscataway, NJ: IEEE. https://doi.org/10.1109/COMSNETS.2016.7439946 (Published)

Real-time detection of seat occupancy and hogging, by NGUYEN, Huy Hoang; GULATI, Nakul; LEE, Youngki; BALAN, Rajesh Krishna. (2015.0). *IoT-App '15: Proceedings of the 2015 International Workshop on Internet of Things towards Applications: Seoul, Korea, November 1,* (pp. 29-34) New York: ACM. https://doi.org/10.1145/2820975.2820981 (Published)

Smartphones and BLE services: Empirical insights, by RADHAKRISHNAN, Meera; MISRA, Archan; BALAN, Rajesh Krishna; LEE, Youngki. (2015.0). *IEEE International Conference on Mobile Ad Hoc and Sensor Systems MASS 2015: October 19-22, Dallas, Texas: Proceedings,* (pp. 226-234) Los Alamitos, CA: IEEE Computer Society. https://doi.org/10.1109/MASS.2015.92 (Published)

Need accurate user behaviour?: Pay attention to groups!, by JAYARAJAH, Kasthuri; LEE, Youngki; MISRA, Archan; BALAN, Rajesh Krishna. (2015.0). *UbiComp '15: Proceedings of the 2015 ACM International Joint Conference on Pervasive and Ubiquitous Computing: Osaka, Japan, September 7-11,* (pp. 855-866) New York: ACM. https://doi.org/10.1145/2750858.2804289 (Published)

GameOn: p2p gaming on public transport, by ZHANG, Nairan, LEE, Youngki, RADHAKRISHNAN, Meera, BALAN, Rajesh Krishna. (2015.0). *MobiSys '15: Proceedings of the 13th Annual International Conference on Mobile Systems, Applications, and Services: May 19-22, Florence, Italy,* (pp. 105-119) New York: ACM. https://doi.org/10.1145/2742647.2742660 (Published)

Matchmaking game players on public transport, by ZHANG, Nairan; LEE, Youngki; BALAN, Rajesh Krishna.

(2015.0). *MobiGames '15: Proceedings of the 2nd Workshop on Mobile Gaming, Florence, Italy, May 19,* (pp. 31-36) New York: ACM. https://doi.org/10.1145/2751496.2751503 (Published)

QueueVadis: Queuing analytics using smartphones, by OKOSHI, Tadashi; LU, Vu; VIG, Chetna; LEE, Youngki; BALAN, Rajesh Krishna; MISRA, Archan. (2015.0). *IPSN '15: Proceedings of the 14th International Conference on Information Processing in Sensor Networks, Seattle, 13-16 April,* (pp. 214-225) New York: ACM. https://doi.org/10.1145/2737095.2737120 (Published)

The case for smartwatch-based diet monitoring, by SEN, Sougata; SUBBARAJU, Vigneshwaran; MISRA, Archan; BALAN, Rajesh Krishna; LEE, Youngki. (2015.0). *2015 IEEE International Conference on Pervasive Computing and Communication Workshops: Proceedings: 23-27 March, St Louis, MO,* (pp. 585-590) Piscataway, NJ: IEEE. https://doi.org/10.1109/PERCOMW.2015.7134103 (Published)

Using infrastructure-provided context filters for efficient fine-grained activity sensing, by SUBBARAJU, Vigneshwaran; SEN, Sougata; MISRA, Archan; CHAKRABORTY, Satyadip; BALAN, Rajesh Krishna. (2015.0). *2015 IEEE International Conference on Pervasive Computing and Communication PerCom: 23-27 March, St Louis, MO: Proceedings,* (pp. 87-94) Piscataway, NJ: IEEE. https://doi.org/10.1109/PERCOM.2015.7146513 (Published)

myDeal: A mobile shopping assistant matching user preferences to promotions, by MURALIDHARAN, Kartik; GOTTIPATI, Swapna; JIANG, Jing; RAMSUBBU, Narayan; BALAN, Rajesh Krishna. (2014.0). *MOBIQUITOUS '14: Proceedings of the 11th International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services: 2-5 December, London,* (pp. 238-247) Brussels: ICST. https://doi.org/10.4108/icst.mobiquitous.2014.257708 (Published)

GruMon: Fast and accurate group monitoring for heterogeneous urban spaces, by SEN, Rijurekha; LEE, Youngki; JAYARAJAH, Kasthuri; BALAN, Rajesh Krishna; MISRA, Archan. (2014.0). *SenSys '14: Proceedings of the 12th ACM Conference on Embedded Network Sensor Systems: Memphis, TN, November 3-6,* (pp. 46-60) New York: ACM. https://doi.org/10.1145/2668332.2668340 (Published)

Cloud-based query evaluation for energy-efficient mobile sensing, by MO, Tianli; SEN, Sougata; LIPYEOW, Lim; MISRA, Archan; BALAN, Rajesh Krishna; LEE, Youngki. (2014.0). *2014 IEEE 15th International Conference on Mobile Data Management: IEEE MDM 2014: 15-18 July 2014, Brisbane, Australia,* (pp. 221-224) Los Alamitos, CA: IEEE Computer Society. http://dx.doi.org/10.1109/MDM.2014.33 (Published)

The case for human-centric personal analytics, by LEE, Youngki; BALAN, Rajesh Krishna. (2014.0). *WPA '14: Proceedings of the 2014 ACM Workshop on Physical Analytics: June 16, Bretton Woods, NH,* (pp. 25-29) New York: ACM. https://doi.org/10.1145/2611264.2611267 (Published)

Handling location uncertainty in event driven experimentation, by MURALIDHARAN, Kartik; BALAN, Rajesh Krishna; SESHAN, Srini; RAMASUBBU, Narayan. (2014.0). *EBS'14: Proceedings of the 8th ACM International Conference on Distributed Event-Based Systems: May 26-29, Mumbai, India,* (pp. 206-212) New York: ACM. https://doi.org/10.1145/2611286.2611303 (Published)

Deal or no deal: Catering to user preferences, by MURALIDHARAN, Kartik; GOTTIPATI, Swapna; BALAN, Rajesh Krishna. (2014.0). *2014 IEEE International Conference on Pervasive Computing and Communication (PERCOM) Workshops: 24-28 March, Budapest, Hungary: Proceedings,* (pp. 199-202) Piscataway, NJ: IEEE. https://doi.org/10.1109/PerComW.2014.6815200 (Published)

Barometric phone sensors: More hype than hope!, by MURALIDHARAN, Kartik; KHAN, Azeem J.; MISRA, Archan; BALAN, Rajesh Krishna; AGARWAL, Sharad. (2014.0). *HotMobile '14: Proceedings of the 15th Workshop on Mobile Computing Systems and Applications, Santa Barbara, CA, February 26-27,* (pp. 12:1-6) New York: ACM. https://doi.org/10.1145/2565585.2565596 (Published)

LiveLabs: Building in-situ mobile sensing & behavioural experimentation testbeds, by BALAN, Rajesh Krishna; MISRA, Archan; LEE, Youngki. (2014.0). *HotMobile '14: Proceedings of the 15th Workshop on Mobile Computing Systems and Applications, Santa Barbara, CA, February 26-27,* (pp. 14-1-6) New York: ACM. https://doi.org/10.1145/2565585.2565597 (Published)

The challenge of continuous mobile context sensing, by BALAN, Rajesh Krishna; LEE, Youngki; TAN, Kiat Wee; MISRA, Archan. (2014.0). *2014 6th International Conference on Communication Systems and Networks (COMSNETS): January 6-10, Bangalore,* (pp. 1-8) Piscataway, NJ: IEEE. https://doi.org/10.1109/COMSNETS.2014.6734869 (Published)

Mobile platform and application research at SMU LiveLabs, by GOTTIPATI, Swapna; SEBASTIAN, Jeena; TUAN, Luong Trung; TAN, Kiat Wee; CHAN, Joseph Joo Keng; MURALIDHARAN, Kartik; OKOSHI, Tadashi;

LEE, Youngki; MISRA, Archan; BALAN, Rajesh Krishna. (2014.0). *2014 6th International Conference on Communication Systems and Networks (COMSNETS): Bangalore, India, January 7-10,* (pp. 1-4) Piscataway, NJ: IEEE. https://doi.org/10.1109/COMSNETS.2014.6734911 (Published)

Challenges and opportunities in taxi fleet anomaly detection, by SEN, Rijurekha; BALAN, Rajesh Krishna. (2013.0). *SENSEMINE'13: Proceedings of the 1st International Workshop on Sensing and Big Data Mining, Rome, Italy, November 11-15,* (pp. 1-6) New York: ACM. https://doi.org/10.1145/2536714.2536715 (Published)

Focus: A usable and effective approach to OLED display power management, by TAN, Kiat Wee; OKOSHI, Tadashi; MISRA, Archan; BALAN, Rajesh Krishna. (2013.0). *UbiComp '13: Proceedings of the 2013 ACM International Joint Conference on Pervasive and Ubiquitous Computing, Zurich, September 8-12,* (pp. 573-582) New York: ACM. https://doi.org/10.1145/2493432.2493445 (Published)

The case for mobile forensics of private data leaks: Towards large-scale user-oriented privacy protection, by CHAN, Joseph Joo Keng; TAN, Kiat Wee; JIANG, Lingxiao; BALAN, Rajesh Krishna. (2013.0). *APSys '13: Proceedings of the 4th Asia-Pacific Workshop on Systems: Singapore, 29-30 July,* (pp. 1-7) New York: ACM. https://doi.org/10.1145/2500727.2500733 (Published)

CAMEO: A middleware for mobile advertisement delivery, by KHAN, Azeem J.; JAYARAJAH, Kasthuri; HAN, Dongsu; MISRA, Archan; BALAN, Rajesh Krishna; SESHAN, Srinivasan. (2013.0). *MobiSys '13: Proceeding of the 11th annual international conference on Mobile Systems, Applications, and Services, Taipei, June 25-28,* (pp. 125-138) New York: ACM. https://doi.org/10.1145/2462456.2464436 (Published)

Experiences with performance tradeoffs in practical, continuous indoor localization, by KHAN, Azeem J.; RANJAN, Vikash; LUONG, Trung-Tuan; BALAN, Rajesh Krishna; MISRA, Archan. (2013.0). *2013 IEEE 14th International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM): Madrid, Spain, June 4-7: Proceedings,* (pp. 1-9) Piscataway, NJ: IEEE. https://doi.org/10.1109/WoWMoM.2013.6583387 (Published)

The case for cloud-enabled mobile sensing services, by SEN, Sougata; MISRA, Archan; BALAN, Rajesh Krishna; LIM, Lipyeow. (2012.0). *MCC '12: Proceedings of the 1st MCC Workshop on Mobile Cloud Computing: August 17, Helsinki, Finland,* (pp. 53-58) New York: ACM. https://doi.org/10.1145/2342509.2342521 (Published)

Adaptive display power management for OLED displays, by TAN, Kiat Wee; BALAN, Rajesh Krishna. (2012.0). *MobiGames'12: Proceedings of the ACM International Workshop on Mobile Gaming: August 13, Helsinki, Finland,* (pp. 25-30) New York: ACM. https://doi.org/10.1145/2342480.2342487 (Published)

Overcoming the challenges in cost estimation for distributed software projects, by RAMASUBBU, Narayanasamy; BALAN, Rajesh Krishna

. (2012.0). *Proceedings of the 34th International Conference on Software Engineering (ICSE), Zurich, Switzerland, 2012 June 2-9,* (pp. 91-101) New York: IEEE. https://doi.org/10.1109/ICSE.2012.6227203 (Published)

Dynamic lookahead mechanism for conserving power in multi-player mobile games, by THIRUGNANAM, Karthik; ANAND, Bhojan; SEBASTIAN, Jeena; KANNAN, Pravein; ANANDA, Akhihebbal L.; BALAN, Rajesh Krishna; CHAN, Mun Choon. (2012.0). *2012 IEEE INFOCOMM International Conference on Computer Communications, Orlando, Florida, 25-30 March: Proceedings,* (pp. 2721-2725) Piscataway, NJ: IEEE. https://doi.org/10.1109/INFCOM.2012.6195687 (Published)

HuMan: Creating memorable fingerprints of mobile users, by PAYAS, Gupta; TAN, Kiat Wee; RAMASUBBU, Narayanasamy; LO, David; GAO, Debin; BALAN, Rajesh Krishna. (2012.0). *2012 IEEE International Conference on Pervasive Computing and Communications Workshops: Lugano, Switzerland, 19-23 March: Proceedings,* (pp. 479-482) Piscataway, NJ: IEEE. https://doi.org/10.1109/PerComW.2012.6197540 (Published)

Adaptive display power management for mobile games, by ANAND, Bhojan; THIRUGNANAM, Karthik; SEBASTIAN, Jeena; KANNAN, Pravein G.; ANANDA, Akhihebbal L.; CHAN, Mun Choon; BALAN, Rajesh Krishna. (2011.0). *MobiSys '11: Proceedings of the 9th International Conference on Mobile Systems, Applications, and Services: Bethesda, MD, June 28 - July 1,* (pp. 57-70) New York: ACM. https://doi.org/10.1145/1999995.2000002 (Published)

Real-time trip information service for a large taxi fleet, by BALAN, Rajesh Krishna; KHOA, Nguyen Xuan; JIANG, Lingxiao. (2011.0). *MobiSys '11: Proceedings of the 9th International Conference on Mobile*

Systems, Applications and Services: Bethesda, MD, June 28 - July 1, (pp. 99-112) New York: ACM. https://doi.org/10.1145/1999995.2000006 (Published)

Configuring global software teams: A multi-company analysis of productivity, quality, and profits, by RAMASUBBU, Narayanasamy; CATALDO, Marcelo; BALAN, Rajesh Krishna; HERBSLEB, James. (2011.0). *ICSE 2011: Proceedings of the 2011 International Conference on Software Engineering: May 21-28, Waikkiki, Honolulu,* (pp. 261-270) New York: ACM. https://doi.org/10.1145/1985793.1985830 (Published)

PGTP: Power aware game transport protocol for multi-player mobile games, by ANAND, Bhojan; SEBASTIAN, Jeena; MING, Soh Yu; ANANDA, Akhihebbal L.; CHAN, Mun Choon; BALAN, Rajesh Krishna. (2011.0). *International Conference on Communications and Signal Processing ICCSP 2011: 10 - 12 February 2011, [Calicut], Kerala, India,* (pp. 399-404) Piscataway, NJ: IEEE. https://doi.org/10.1109/ICCSP.2011.5739346 (Published)

ARIVU: Power-aware middleware for multiplayer mobile games, by ANAND, Bhojan; THIRUGNANAM, Karthik; LE, Thanh Long; PHAM, Duc-Dung; ANANDA, Akhihebbal L.; BALAN, Rajesh Krishna; CHAN, Mun Choon. (2010.0). *NetGames 2010: 9th Annual Workshop on Network and Systems Support for Games, November 16-17, Taipei, Taiwan: Proceedings,* (pp. 1-6) Piscataway, NJ: IEEE. https://doi.org/10.1109/NETGAMES.2010.5679571 (Published)

Evolution of a Bluetooth Test Application Product Line: A Case Study, by RAMASUBBU, Narayanasamy; BALAN, Rajesh Krishna. (2010.0). *Proceedings of the 18th ACM SIGSOFT Symposium on the Foundations of Software Engineering (FSE), November 7 - 11, 2010, Santa Fe, NM,* (pp. 107-116) New York: ACM. http://dx.doi.org/10.1145/1882291.1882309 (Published)

Game action based power management for multiplayer online game, by ANAND, Bhojan; ANANDA, A. L.; CHAN, Mun Choon; LE, Long Thanh; BALAN, Rajesh Krishna. (2009.0). *MobiHeld '09: Proceedings of the 1st ACM Workshop on Networking, Systems, and Applications on Mobile Handhelds, Barcelona, Spain, August 17,* (pp. 55-60) New York: ACM. https://doi.org/10.1145/1592606.1592619 (Published)

mFerio: The design and evaluation of a peer-to-peer mobile payment system, by BALAN, Rajesh Krishna; RAMASUBBU, Narayanasamy; PRAKOBPHOL, Komsit; CHRISTIN, Nicolas; HONG, Jason. (2009.0). *MobiSys '09: Proceedings of the 7th ACM International Conference on Mobile Systems, Applications and Services, June 22-25, Kraków, Poland,* (pp. 291-305) New York: ACM. https://doi.org/10.1145/1555816.1555846 (Published)

The impact of process choice in high maturity environments: An empirical analysis, by RAMASUBBU, Narayanasamy; BALAN, Rajesh Krishna. (2009.0). *IEEE 31st International Conference on Software Engineering: ICSE 2009: 16-24 May, Vancouver, Canada: Proceedings,* (pp. 529-539) Piscataway, NJ: IEEE. https://doi.org/10.1109/ICSE.2009.5070551 (Published)

User guidance of resource-adaptive systems, by SOUSA, João Pedro; BALAN, Rajesh Krishna; POLADIAN, Vahe; GARLAN, David; SATYANARAYANAN, Mahadev. (2008.0). *Proceedings of the Third International Conference on Software and Data Technologies: Porto, Portugal, July 5-8, 2008,* (pp. 36-44) Porto, Portugal: INSTICC Press. https://worldcat.org/isbn/9789898111524 (Published)

Towards Governance Schemes for Distributed Software, by RAMASUBBU, Narayanasamy; BALAN, Rajesh Krishna. (2008.0). *SDG '08: Proceedings of the 1st International Workshop on Software Development Governance: 2008, Leipzig, Germany, May 12-12, 2008,* (pp. 11-14) New York: ACM. http://dx.doi.org/10.1145/1370720.1370725 (Published)

Globally Distributed Software Development Project Performance: An Empirical Analysis, by RAMASUBBU, Narayanasamy; BALAN, Rajesh Krishna. (2007.0). *ESEC/FSE 2007: The 6th Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering: Dubrovnik, Croatia, September 3-7, 2007,* (pp. 125-134) New York: ACM. http://dx.doi.org/10.1145/1287624.1287643 (Published)

Simplifying Cyber Foraging for Mobile Devices, by BALAN, Rajesh Krishna; Gergle, Darren; Satyanarayanan, Mahadev; Herbsleb, James. (2007.0). *MobiSys '07: Proceedings of the 5th International Conference on Mobile Systems, Applications and Services: San Juan, Puerto Rico, June 11-13, 2007,* (pp. 272-285) New York: ACM. http://dx.doi.org/10.1145/1247660.1247692 (Published)

Matrix: Adaptive middleware for distributed multiplayer games, by BALAN, Rajesh Krishna; EBLING, Maria; CASTRO, Paul; MISRA, Archan. (2005.0). *Middleware 2005: ACM/IFIP/USENIX 6th International Middleware Conference, Grenoble, France, November 28 - December 2: Proceedings,* (pp. 390-400) Berlin: Springer. https://doi.org/10.1007/11587552_20 (Published)

Tactics-Based Remote Execution for Mobile Computing, by BALAN, Rajesh Krishna; SATAYANARAYANA, Mahadev; PARK, SoYoung; OKOSHI, Tadashi. (2003.0). *MobiSys '03: Proceedings of the 1st International Conference on Mobile Systems, Applications and Services: San Francisco, May 5-8, 2003,* (pp. 273-286) New York: ACM. http://dx.doi.org/10.1145/1066116.1066125 (Published)

The Case for Cyber Foraging, by BALAN, Rajesh Krishna; Flinn, Jason; Satyanarayanan, Mahadev; Sinnamohideen, Shafeeq; YANG, Hen-I. (2002.0). *EW 10: Proceedings of the 10th Workshop on ACM SIGOPS European Workshop: Saint Emillion, France, July 1, 2002,* (pp. 87-92) New York: ACM. http://dx.doi.org/10.1145/1066116.1066125 (Published)

TCP HACK: TCP Header Checksum Option to Improve Performance Over Lossy Links, by BALAN, Rajesh Krishna; LEE, Boon Peng; KUMAR, Renjish; Lillykutty, Jacob; Seah, Winston; Ananda, A. L.. (2001.0). *INFOCOM 2001: Proceedings of 20th Annual Joint Conference on Computer Communications, 22-26 April 2001, Anchorage, Alaska,* (pp. 309-318) Piscataway, NJ: IEEE. http://dx.doi.org/10.1109/INFCOM.2001.916713 (Published)

Conference Papers

WiWear: Wearable sensing via directional wifi energy harvesting, by TRAN, Vu H.; MISRA, Archan; XIONG, Jie; BALAN, Rajesh Krishna. (2019.0). *2019 IEEE International Conference on Pervasive Computing and Communications (PerCom), Kyoto, Japan, March 11-15,* Kyoto. https://doi.org/10.1109/PERCOM.2019.8767406 (Published)

Moved by conflict: Exploring the relationship between experienced conflict and individual mobility patterns, by ZAKARIA, Nur Camellia Binte; GOH, Kenneth T.; LEE, Youngki; BALAN, Rajesh Krishna. (2018.0). *Interdisciplinary Network for Group Research, Baltimore, Maryland, US, 2018 July 19-21,* Baltimore, Maryland, US. (Presented)

Other Outputs and Contributions

Reports

Spatio-temporal efficiency in a taxi dispatch system by SANTANI, Darshan; BALAN, Rajesh Krishna; WOODARD, C. Jason. (2008). (Published)

Dimorphic Computing by Lagar-Cavilla, H. Andreas; Tolia, Niraj; BALAN, Rajesh Krishna; De Lara, Eyal; Satyanarayanan, Mahadev; O'Halloran, David. (2006). http://repository.cmu.edu/pdl/43/ (Published)

Giving Users the Steering Wheel for Guiding Resource-Adaptive Systems by SOUSA, Joao; BALAN, Rajesh Krishna; Poladian, Vahe; Garlan, David; Satyanarayanan, Mahadev. (2005). (Published)

Meeting the software engineering challenges of adaptive mobile applications by BALAN, Rajesh Krishna; SOUSA, Joao Pedro; SATYANARAYANAN, Mahadev. (2003). https://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.13.728 (Published)

Others

Generalized on-demand service architecture for interactive applications [US Patent 2006/0168107 A1], by BALAN, Rajesh K.; CASTRO, Paul C.; EBLING, Maria R.; MISRA, Archan. (2006). In (1-24). https://patents.google.com/patent/US20220269946A1/en (Published)

Research Grants

Singapore Management University

Food Recognition: Causality-driven Cross-modal Cross-lingual Domain Adaptation, Academic Research Fund (AcRF) Tier 2, Ministry of Education (MOE) , PI (Project Level): NGO Chong Wah , Co-PI (Project Level): Rajesh Krishna BALAN, 2023, S$749,177

Quantum-Enhanced Modelling of Financial Time-Series Data for Rare Event Forecasting, QEP Call for Proposals, Quantum Engineering Programme (QEP) , Co-PI (Project Level): Paul Robert GRIFFIN, Rajesh Krishna BALAN, 2022, S$1,372,272

Improving Fairness and Accessibility of Crowd Work, Academic Research Fund (AcRF) Tier 2, Ministry of Education (MOE) , PI (Project Level): HARA, Kotaro , Co-PI (Project Level): Rajesh Krishna BALAN, 2021, S$579,384

Identifying Personas Using Video Analytics, Microsoft Research Asia Collaborative Research, Microsoft Research Asia , PI (Project Level): Rajesh Krishna BALAN, 2019

Building a Practical Location System for Tracking Consumer Movement in Indoor Public Spaces, Microsoft Research Asia , PI (Project Level): Rajesh Krishna BALAN, 2013, S$26,000

Windows Phone 7 Location Detection Framework, Microsoft Research Asia , PI (Project Level): Rajesh Krishna BALAN, 2012, S$15,120

LiveLabs Urban Lifestyle Innovation Platform, Digital Technology Development Scheme, Media Development Authority of Singapore (MDA) , PI (Programme Level): Rajesh Krishna BALAN , PI (Project Level): Archan MISRA, 2012, S$9,994,000

Energy-Efficient Stream Analytics on Smartphones for Realtime Contextual Insight, Academic Research Fund (AcRF) Tier 2, Ministry of Education (MOE) , PI (Project Level): Archan MISRA , Co-PI (Project Level): Rajesh Krishna BALAN, 2011, S$1,167,365

Power and Network-Aware Software Infrastructure for Multiplayer Mobile Games, Academic Research Fund (AcRF) Tier 2, Ministry of Education (MOE) , PI (Project Level): Rajesh Krishna BALAN, 2008, S$1,168,000

Leveraging Mobile Sensing to Provide Early Detection of Meltdowns in Children with Autism, SMU Internal Grant, Ministry of Education (MOE) Tier 1 , PI (Project Level): Rajesh Krishna BALAN, 2023, S$120,000

Transforming Competitive Swimming with Physiological & Smart Drone Based Sensing, Analysis and Coaching Insights, SMU Internal Grant, Ministry of Education (MOE) Tier 1 , PI (Project Level): Rajesh Krishna BALAN, 2023, S$125,000

Designing a Data Governance Framework for Suspicious Behaviour Detection System, SMU Internal Grant, Ministry of Education (MOE) Tier 1 , PI (Project Level): LIM How Khang , Co-PI (Project Level): Rajesh Krishna BALAN, 2022, S$40,000

Personality in Real-Time Real-World Behaviour, SMU Internal Grant, Ministry of Education (MOE) Tier 1 , PI (Project Level): William TOV, 2015, S$25,580

User-Centric Mobile Authentication Mechanisms, SMU Internal Grant, Ministry of Education (MOE) Tier 1 , PI (Project Level): Rajesh Krishna BALAN, 2009, S$9,408

Estimating Costs in Distributed Software Development and System Migration, SMU Internal Grant, Ministry of Education (MOE) Tier 1 , PI (Project Level): Narayan RAMASUBBU , Co-PI (Project Level): Rajesh Krishna BALAN, 2008, S$14,650

Digital Wallet Creation, Testing, and Deployment, SMU Internal Grant, Ministry of Education (MOE) Tier 1 , PI (Project Level): Rajesh Krishna BALAN, 2007, S$49,400

Other Institutions

PresentationPro: Improving Public Speaking Skills through AI-Driven Virtual Reality Interactions, MOE TRF, MOE Tertiary Education Research Fund , PI (Programme Level): Kyong Jin SHIM, PI (Project Level): Kyong Jin SHIM, Co-PI (Project Level): Swapna GOTTIPATI, Rajesh Krishna BALAN, DAI Bing Tian, 2024, SGD144,302.2

Leveraging Mobile Sensing to Provide Early Detection of Meltdowns in Children with Autism, Academic Research Fund (AcRF) Tier 1, (MOE), Academic Research Fund (AcRF) Tier 1, (MOE) PI (Project Level): Rajesh Krishna BALAN, 2023, SGD120,000

Improving and monitoring the effectiveness of social distancing policies in institutes of higher learning,

Central Gap Fund (COVID-19 Challenge), National Research Foundation PI (Project Level): Rajesh Krishna BALAN, 2020, SGD49,980

IndoorLoc Systems, SMU IIE Internal Innovation Grant, Ministry of Education PI (Project Level): Rajesh Krishna BALAN, 2019, SGD250,000

TEACHING

Courses Taught

Singapore Management University

Undergraduate Programmes :

- Foundations of Cyber-Physical Systems
- Interconnection of Cyber Physical Systems
- Internet of Things: Technology and Applications
- Software Project Management

Postgraduate Research Programmes :

- Empirical Research Project 1
- Empirical Research Project 2
- Empirical Research Project 3
- Empirical Research Project 4
- Empirical Research Project I

THESES AND DISSERTATIONS

Theses and Dissertations Supervised

Singapore Management University

Supervisor, "Enabling Real-Time In-Situ Context-based Experimentation to Observe User Behaviour", Dissertation by KARTIK MURALIDHARAN, PhD in Information Systems, Singapore Management University, 2015

Theses and Dissertations Assessed

Singapore Management University

Committee Member, "Fusing Mobile, Wearable and Infrastructure Sensing for Daily Lifestyle Analytics", Dissertation by SOUGATA SEN, PhD in Information Systems, Singapore Management University, 2017

Committee Member, "A Dependency Graph Method for Analyzing Software Modifiability", Dissertation by KEVIN STEPPE, PhD in Information Systems, Singapore Management University, 2015

Other Institutions

Committee Member, "Large-scale Geo-referenced Sensing Using Personal Mobile Devices", Thesis by João Guilherme Pereira Rodrigues, Ph.D., University of Porto, 2019

Committee Member, "Sensing Flow Execution Engine for Concurrent Mobile Sensing Applications", Thesis by Younghyun Ju, Ph.D., KAIST, 2013

EXTERNAL SERVICE – PROFESSIONAL

Chairperson, UbiComp / Pervasive 10 Year Impact Award Committee, Association for Computing Machinery, 2020 - 2021

Workshop Chair, The 25th Annual International Conference on Mobile Computing and Networking (MobiCom), Association for Computing Machinery, 2019

Chairperson, 1st Americas Student Symposium on Emerging Technologies (ASSET), Association for Computing Machinery, 2019

Program Chair, The International Conference on Mobile Systems, Applications, and Services (MobiSys), Association of Computing Machinery (ACM), 2019

Program Chair, 11th International Conference on Communication Systems & Networks (COMSNETS), COMSNETS, 2019

Committee Member, UbiComp Steering Commitee, Association for Computing Machinery, 2018 - 2022

Program Committee Chair, The 17th ACM International Conference on Mobile Systems, Applications, and Services (MobiSys), Association for Computing Machinery Special Interest Group on Mobile Computing (SIGMOBILE), 2018 - 2019

Program Committee Chair, 11th International Conference on Communication Systems & Networks (COMSNETS), COMSNETS Association, 2018 - 2019

Chairperson, 2nd Asian Students Symposium on Emerging Technologies (ASSET), ACM SIGMOBILE, 2018

General Chair, The ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp), ACM SIGMOBILE & ACM SIGCHI, 2018

Presenter Keynote Address, 8th Annual International Conference on Computer Science Education, Innovation and Technology (CSEIT), Global Science and Technology Forum (GSTF), 2017

Student Engagement Director, Executive Committee, Association for Computing Machinery Special Interest Group on Mobile Computing (SIGMOBILE), 2017 - 2022

Member, Test of Time Paper Award Committee, ACM SIGMOBILE, 2017

Program Chair, 4th Workshop on Physical Analytics (WPA), ACM SIGMOBILE, 2017

Workshop Chair, The 13th International Conference on emerging Networking EXperiments and Technologies (CoNEXT), ACM SIGCOMM, 2017

Presenter Keynote Address, 17TH IEEE International Conference on Mobile Data Management (MDM), IEEE COMSOC, 2016

Poster & Demo Chair, 17th International Conference on Distributed Computing and Networking (ICDCN), ICDCN, 2016

Chairperson, 1st Asian Students Symposium on Emerging Technologies (ASSET), ACM SIGMOBILE, 2016

Presenter Keynote Address, 2nd Workshop on Mobile Gaming (MobiGames), ACM SIGMOBILE, 2015

Poster & Demo Session Chair, The 13th ACM Conference on Embedded Networked Sensor Systems (SenSys), ACM SIGMOBILE, 2015

Workshop Chair, The 13th Annual International Conference on Mobile Systems, Applications and Services (MobiSys), ACM SIGMOBILE, 2015

Invited Lecture, 6th International Conference on Communication Systems and Networks (COMSNETS), COMSNETS, 2014

Program Chair, The ACM Multimedia Systems Conference Special Session on Mobile Multimedia Sensing (MMSys), ACM SIGMM, 2014

Program Chair, The Seventh International Conference on Mobile Computing and Ubiquitous Networking (ICMU), Information Processing Society Of Japan, 2014

Program Chair, 1st Workshop on Mobile Gaming (MobiGames), ACM SIGCOMM, 2012

Editor Journal Editor, IEEE Pervasive Computing Magazine Special Issue on Transportation Systems, IEEE Computer Society, 2012 - 2013

Poster Session Chair, The 3rd Asia-Pacific Workshop on Systems (APSys), ACM SIGOPS and ACM SIGCOMM, 2012

Program Chair, The Thirteenth Workshop on Mobile Computing Systems and Applications (HotMobile), ACM SIGMOBILE, 2012

Poster / Demo Session Chair, The Twelfth International Workshop on Mobile Computing Systems and Applications (HotMobile), ACM SIGMOBILE, 2011

Poster & Demo Chair, The 7th Annual International Conference on Mobile Systems, Applications, and Services (MobiSys), ACM SIGMOBILE, 2009

Doctoral Consortium Chair, The Tenth International Workshop on Mobile Computing Systems and Applications (HotMobile), ACM SIGMOBILE, 2009