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**Summary**

Research Engineer with experience in, both research and production work in the desktop, backend and mobile domain. With technical expertise and experience in analysing information systems related research questions, requirements and problems. In addition, possesses strong development and implementation skills to bring resolution to any issues. Strengths include unwavering determination to resolve any issues to achieve a set goal/s, strong passion in investigating and uncovering problem roots as well as exploring new approaches to resolving an issue.

**Education**

Master of Philosophy in Information Systems, Singapore Management University, 2014 (Previously named Masters Degree (Research) in Information Systems)

- Focus areas: Ubiquitous and mobile computing
  - Research areas: Mobile display power management (OLED Display), Mobile Privacy
- Thesis: Using User Saliency For Effective OLED Display Power Management

Masters Degree (Coursework) in Information Systems, Nanyang Technological University, 2010

- Focus areas: Ubiquitous and mobile computing & software engineering.
- Final Year Project: Developed an image annotation gaming (GWAP: Games With A Purpose) with alternative competitive game modes with single user approach to address low user-pairing problem.

Bachelor's Degree in Electrical & Electronic Engineering, Nanyang Technological University, 2007.

- Major: Info-communication Engineering. Areas of study: Cyber Security, Computer Security, Computer Networking And Object-Oriented Programming Design.
- Develop Data Mining For Cyber Intrusion software for Final Year Project.

Diploma in Electronics, Communications & Computer, Singapore Polytechnic, May 1999.

- Majoring in Computer Systems Technology
- Final Year Project: Developed video subtitle editor software that allows editing, previewing and rendering of subtitles into video stream.

**Research Interest**

- Mobile Systems & Ubiquitous Computing
- Human-Computer Interactions
- Mobile Security and Privacy

**Research Experience**

Singapore Management University  
Research Engineer (Research)

2010 – 2022

- Part of Research team for "LiveLabs Urban Lifestyle Innovation Platform" funded by the Media Development Authority of Singapore (MDA).
- Participate in research and development for LiveLabs in the following areas:
  - Display Power management on mobile devices.
  - Content and Context Aware data collection on personal mobile devices for behavioural monitoring and events intervention feedback (e.g. Reactions to push promotions to users).
  - Mobile security and privacy protection.

- Handle implementation integration of user-space software in both front end Apps (Android) as well as backend web services with REST. Such as data collection of user activities on the phone, location of user (outdoor/indoor), data management (collect/compress/upload), power management and user interface/user experience.
- Handle implementation of low-level operating system kernel modifications and implementations in Android subsystems for research purposes. (E.g. modifying device's display algorithm within the operating system).

Nanyang Technological University 2007 – 2010  
Research Associate (Research Staff)

- Team member in "Integrated Content-and-Context Aware Media Retrieval Systems for Mobile Media Applications" under the AStar Mobile Media Thematic Strategic Research Program.
- Deployment of research algorithms and integration of system components: backend and mobile devices (Windows Mobile and Google Android).
- Handled all implementation work in the following areas:
  - Client side development
    - Developed Windows Mobile and Google Android client front ends.
  - Server side development
    - Deployed Service-Oriented Architecture web services using both SOAP and REST.
    - Development of framework for system to bridge client, backend services and business logic (algorithms)
- Team lead in Mobile Media TSRP Program Demonstrator. Team in charged of a development of campus companion demonstrator that involves bringing all developed technologies covered by teams under Mobile Media TSRP.

### **Industrial Experience**

Singapore Management University 2013 – 2022  
Research Engineer (Production)

- Part of the Centre for Applied Smart-Nation Analytics (CASA)
  - Under SMU collaboration Retail Analytics project with Urban Redevelopment Authority (URA) and Housing & Development Board (HDB)
- Handle portion of data processing: Mainly in data cleaning, that precludes import, rebuilding, standardizing, normalizing and merging with other data sets.
- Development of productions systems to display data and derived analytics. These includes:
  - Backend Web services
  - Portal (Visualisation)
- Part of SMU Start up: SenzIQ. To commercialised LiveLabs indoor localisation technology.
- Development of productions systems that utilised WiFi technology to localised people within indoor location to understand the movement. These include backend web services with front end portal to visualised analytics.
- Part of Production Team for "LiveLabs Urban Lifestyle Innovation Platform" team by the Media Development Authority of Singapore (MDA).
- Development of production systems with collaboration with industries to bring developed research systems into production domain. Examples:
  - LiveLabs@SMU: Systems to integrate with student lifestyle throughout SMU as well as retail partners in SMU.

- LiveLabs@Sentosa: Systems to integrate tourism, F&B and recreational lifestyle activities on the Sentosa Island.
- Development of front-end Apps and subsystems for mobile devices (Android) as well as backend web services and portals (for partners) to facilitate the usage and management of the transferred technology to the partners.
- Examples of deployed system (both Front and backend)
  - EVA Live: Student School/Lifestyle Application
    - <https://play.google.com/store/apps/details?id=sg.edu.smu.livelabs.smuevent>
  - Conference Apps: Conference specified apps tailored to partners conferences. Such as MobiSys17, Singapore Fintech Festival, etc.
    - <https://play.google.com/store/apps/details?id=sg.edu.smu.livelabs.iasia2019>
    - <https://play.google.com/store/apps/details?id=sg.edu.smu.livelabs.itap2018>
  - (iOS counterparts are also available on Apple App Store)

ABS Computer Pte Ltd

2002 – 2005

Technical Support Engineer

- Assist in quality controllers (QCs) centered training in using testing and maintain testing equipment. This creates standardized procedures based on what the QCs can do and allow QC to acquire new skills that would benefit them for life.
- Participated in developing quality assurance procedures and tools. This enhances the learning process of the QCs and effectively strength quality control. This results in QCs increase automation for better efficiency.
- Redevelop technical support documentation that would cut miscommunication, facilitate and shorten the learning curve. This is done with short and clear language with pictorials technical guides and manuals.
- Development of demonstration software that effectively address the learning objectives of the customer's needs. Such as demonstrates the capability of the product to the customers. One such is the implementation of secured logon and transaction process using Dallas Semiconductor iButton design onto company Point-Of-Sales product.

Armour Training Centre, Singapore Armed Forces

2000 – 2002

Military Project Clerk National Servicemen Full-time. Rank: Corporal.

- Implemented in-house software program on data collection & tabulation for Individual Physical Proficiency Test (IPPT) across wireless LAN. For Armour Training Centre, Singapore Armed Forces. Improved overall work time from 1 week to 1 day as comparative contrast to a prototype system developing at DSTA (then).
- Implemented software program for Bar-coding & Tracking of publications for Armour Training Centre, Singapore Armed Forces. Reduce wastage of manpower for reprinting and tracking of publication.

**Teaching Experience**

Singapore Management University

- Teaching Assistant For Undergraduate course in Software Foundations (Java) and Mobile and Pervasive Technology.
  - Aid in course management and administrative matters, guidance in course projects and grading of assignments.

Nanyang Technological University

- Course Assistant for Object Oriented Software Engineering Design
  - Aid in course activities such as guidance in mini projects and class assignment for a day course for industry.
- Mentoring for undergraduates in Final-Year Projects as well as undergraduate research experience program (URECA) and design and innovation project (DIP).
  - Aid in guidance, moderating and monitoring of undergraduates during the final-year projects.

**Other Qualification**

- Completed ISO 9001:2000 Course conducted by SGS-SSC. Certificate Number: 03/702587/3290.

## Computer Skills

- Operating Systems: Android, Linux, OSX, Microsoft Windows
- Computer Languages: Java, Visual Basic/C#, C, Swift, Python, Shell Scripting (BASH)
- Scientific Applications: MATLAB, Python-Pandas
- Mobile Development: Android, Windows Phone 8, iOS
- Office Applications: Microsoft Office Suite.
- Web development: Web services (REST/SOAP) Java, PHP, ReactJS
- Databases: Posgres, MySQL, Microsoft Access.
- VM/Tools: Vagrant, Docker

## Publications

- **Tan Kiat Wee**, Tadashi Okoshi, Archan Misra, and Rajesh Krishna Balan. 2013. *FOCUS: a usable & effective approach to OLED display power management*. In Proceedings of the 2013 ACM international joint conference on Pervasive and ubiquitous computing (UbiComp '13). **[Honourable Mention]**
- **Tan Kiat Wee** and Rajesh Krishna Balan. 2012. *Adaptive display power management for OLED displays*. In Proceedings of the first ACM international workshop on Mobile gaming (MobileGames '12). **[Best Paper Award]**
- **Tan Kiat Wee**, Eduardo Cuervo, and Rajesh Balan. 2018. FocusVR: Effective 8 Usable VR Display Power Management. Proc. ACM Interact. Mob. Wearable Ubiquitous Technol. 2, 3, Article 142 (September 2018), 25 pages.
- Kenny Tsu Wei Choo, Rajesh Krishna Balan, **Tan Kiat Wee**, Jagmohan Chauhan, Archan Misra, and Youngki Lee. 2017. Empath-D: Empathetic Design for Accessibility. In *Proceedings of the 18th International Workshop on Mobile Computing Systems and Applications (HotMobile '17)*. ACM, New York, NY, USA, 55-60.
- Joseph Chan Joo Keng, Lingxiao Jiang, **Tan Kiat Wee**, and Rajesh Krishna Balan. 2016. Graph-aided directed testing of Android applications for checking runtime privacy behaviours. In *Proceedings of the 11th International Workshop on Automation of Software Test (AST '16)*. ACM, New York, NY, USA, 57-63.
- Gottipati, S.; Sebastian, J.; Luong Trung Tuan; **Tan Kiat Wee**; Chan, J.; Joo Keng; Muralidharan, K.; Okoshi, T.; Youngki Lee; Misra, A.; Balan, R.K., "Mobile platform and application research at SMU LiveLabs," in Communication Systems and Networks (COMSNETS), 2014 Sixth International Conference on , vol., no., pp.1-4, 6-10 Jan. 2014
- Balan, R.K.; Youngki Lee; **Tan Kiat Wee**; Misra, A., "The challenge of continuous mobile context sensing," in Communication Systems and Networks (COMSNETS), 2014 Sixth International Conference on , vol., no., pp.1-8, 6-10 Jan. 2014
- **Tan Kiat Wee**, Tadashi Okoshi, Archan Misra, and Rajesh Krishna Balan. 2013. *ACM HotMobile 2013 demo: Focus: a demo on usable & effective approach to OLED display power management*. SIGMOBILE Mob. Comput. Commun. Rev. 17, 3 (November 2013), 5-6.
- Zhen Li, Kim-Hui Yap, **Tan Kiat Wee**, *Context-aware mobile image annotation for media search and sharing*, Signal Processing: Image Communication, Volume 28, Issue 6, July 2013
- Joseph Chan Joo Keng, **Tan Kiat Wee**, Lingxiao Jiang, and Rajesh Krishna Balan. 2013. *The case for mobile forensics of private data leaks: towards large-scale user-oriented privacy protection*. In Proceedings of the 4th Asia-Pacific Workshop on Systems (APSys '13).
- Gupta, P.; **Tan Kiat Wee**; Ramasubbu, N.; Lo, D.; Debin Gao; Balan, R.K., "HuMan: Creating memorable fingerprints of mobile users," in Pervasive Computing and Communications Workshops (PERCOM Workshops), 2012 IEEE International Conference on , vol., no., pp.479-482, 19-23 March 2012