

# Dr.-Ing. Sian Lun Lau

## *curriculum vitae*

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### Education

- Nov. 2011 **Dr.-Ing. in Computer Science (PhD)**, *University of Kassel*, Kassel, Germany.
- Nov. 2004 **MSc in Electrical Communication Engineering**, *University of Kassel*, Kassel, Germany.
- June 2000 **BEng in Electronics and Telecommunications (Hons)**, *Universiti Malaysia Sarawak*, Kota Samarahan, Sarawak, Malaysia.

### Experience

- Jan. 2015 - present **Associate Dean/Head of Department/Associate Professor**, *Department of Computing and Information Systems, Faculty of Science and Technology, Sunway University*, Bandar Sunway, Selangor, Malaysia.
- Assist the dean of faculty in day-to-day operation and management.
  - Management of academic staff in teaching and research.
  - Planning and management of existing and new academic programmes.
  - Execution and acquisition of research projects.
  - Teaching for undergraduate and postgraduate programmes.
  - Supervision of undergraduate and postgraduate students.
- Feb. 2013 - **Head of Department/Senior Lecturer**, *Department of Computer Science and Networked Systems, Department of Information Systems (since Aug. 2014), Faculty of Science and Technology, Sunway University*, Bandar Sunway, Selangor, Malaysia.
- Dec. 2014
- Same as responsibilities listed above.
- Nov. 2011 - **Postdoctoral Researcher**, *Chair for Communication Technology, University of Kassel*, Kassel, Germany.
- Jan. 2013
- Led and contributed in EU project SEAM4US.
  - Acquisition of new research projects.
  - Supervision of student projects and theses.
- Oct. 2004 - **Researcher**, *Chair for Communication Technology, University of Kassel*, Kassel, Germany.
- Nov. 2011
- Managed and contributed in EU and national funded research projects (S4ALL (EU), MobiLife (EU), MATRIX (National)).
  - Supervision of student projects and theses.

- May. 2003 - **Technical Assistant**, *Networking Concepts GmbH*, Kassel, Germany.  
Aug. 2004
- Managed and supported the customers of the company with products such as Virtual Private Network (VPN), server infrastructure, web-based services.
  - Participated in the setup of Document Management System (DMS) infrastructure for Pro-Document in Kasseler Werkstatt.
- Dec. 2001 - **Technical Documentation**, *Cobion AG/Internet Security Systems*, Kassel, Germany.  
Sept. 2004
- In charged to author the user manuals for company products - OrangeBox Mail and OrangeBox Web.
  - Collaborated with the US technical documentation team for the user manuals of the products after the acquisition of the company Cobion AG by Internet Security Systems.

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## Research Interests

My research interests are in the area of mobile computing, specifically dealing with topics such as context awareness, user-centric computing and activity recognition. I am particularly interested in applying unobtrusive approaches in bringing future technology to everyday life. I was involved in projects and research related to various application domains such as telemedicine, communication, energy consumption optimisation and car2x. I am also interested in applying and improving algorithms for context awareness, such as meta-level classifiers and density-based clustering approaches.

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## Teaching and Research Supervision Experience

Taught lectures at the Department of Computer Science and Networked Systems, Sunway University:

- Diploma level: Advanced Programming, Web Engineering
- Bachelor degree level: Concurrent Programming, Software Architecture and Design Patterns
- Postgraduate level: Research Methodology.
- Currently supervising four Masters students.

Participated undergraduate and graduate level lectures at the Chair for Communication Technology (ComTec), University of Kassel:

- Communication Technologies I/II, Introduction to Communications, Java Code Camp.
- Taught and coordinated the Cisco Certified Network Associate (CCNA) courses at ComTec from year 2003 - 2006.
- Supervised over 20 students thesis, projects and seminar (Masters and Bachelor level).

Served as Internal Examiner at Sunway University:

- Jan 2017 - Doctor of Philosophy (Computing) (Viva) - Syed Aqeel Raza - *“Multi-Hop Communication in Cognitive Radio Networks: An Experimental Study”*
- April 2015 - MSc Computer Science (Viva) - Yasir Saleem - *“A Spectrum-aware Cluster-based Routing Scheme for Cognitive Radio Networks: A Simulation Study”*
- November 2013 - MSc Mobile Systems (Viva) - Law Yeong Hui - *“A Framework for Indoor Positioning System based on Android Platform”*

Served as External Examiner:

- June 2017 - Doctor of Philosophy (Thesis) - Bala Murali A. - *“Efficient Dissemination of Weather Forecasting to Safeguard Farmers from Crop Failure Using Optimized Neural Network Model”*, University of Kassel
- September 2015 - Dr.-Ing (Informatik) (Viva) - Yaqian Xu - *“Autonomous Indoor Localization Using Unsupervised Wi-Fi Fingerprinting”*, University of Kassel

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## Professional Services

Professional Body:

- IEEE - Senior member
- IEEE Computer Society Malaysia - Executive committee member 2017

Organizer/Chair/Co-Chair for:

- Technical Programme Chair for the 2017 IEEE Conference on e-Learning, e-Management and e-Services (IC3e 2017)
- Technical Programme Chair for the 2016 IEEE Conference on e-Learning, e-Management and e-Services (IC3e 2016)
- Technical Programme Chair for the 22nd International Conference on Virtual Systems & Multimedia (VSMM 2016)
- Technical Programme Chair for the 2015 IEEE Conference on e-Learning, e-Management and e-Services (IC3e 2015)
- Organising Committee for the 2015 IEEE Conference on Open Systems (ICOS2015)
- Organising Committee for the 2015 IEEE Conference on Wireless Sensors (ICWiSE 2015)
- Publicity Chair for the IET International Conference on Frontiers of Communications, Networks and Applications (IET ICFCNA 2014)
- Co-chair for the AwareCast2014: 3rd Workshop on recent advances in behavior prediction and pro-active pervasive computing
- Co-chair for the AwareCast2013: 2nd Workshop on recent advances in behavior prediction and pro-active pervasive computing

Reviewer for the following journal:

- HIMAA Health Information Management Journal
- MDPI Sensors — Special Issue “Ubiquitous Sensing”
- Higher Education Evaluation and Development (HEED)

Book editorial advisory board member:

- Book Assistive Technologies for Physical and Cognitive Disabilities (to be published in 2014/2015) (<http://www.igi-global.com/publish/call-for-papers/call-details/1117>)

Invited Talks/Guest Lecturesr:

- 15th January 2016, Noida, India - invited keynote speaker talk “*From IoT to IoP - Towards Democratization of Data*”, 2016 6th International Conference - Cloud System and Big Data Engineering (Confluence), Amity University, India
- 9th January 2016, Kuala Lumpur - Invited talk “*Data Speaks Louder Than Words*”, The Star Education Fair 2016, Kuala Lumpur Convention Centre, Malaysia
- 3rd September 2015, Serdang - Invited talk “*Empowering Smart Community through Crowd-sourced Services and Open Data*”, 4th International Smart City Workshop 2015, Universiti Putra Malaysia, Malaysia
- 18th January 2015, Kuala Lumpur - Invited talk “*Speaking in Code: Career in Coding and Programming*”, The Star Education Fair 2015, Kuala Lumpur Convention Centre, Malaysia
- 5th September 2014, Bandar Sunway - Guest Lecture “*Machine Impossible*”, Lancaster-Sunway Summer School, Malaysia
- 2nd August 2014, Wernigerode - Guest Lecture “*Software Dev. @ Sunway University - Strategy, Rationale and Beyond*”, CodeCamp48 – Organized by Harz University of Applied Sciences, Germany

Technical Program Committee reviewer for the following conferences:

- IEEE Symposium on Industrial Electronics & Applications (ISIEA) since 2012
- IEEE International Conference on Control System, Computing and Engineering (ICCSCE) since 2012
- International Conference on IT Convergence and Security (ICITCS 2013)
- 2013 IEEE Conference on Clean Energy and Technology (CEAT 2013)
- 2013 IEEE Conference on Wireless Sensors (ICWiSe 2013)
- 2013 IEEE Symposium on Computers & Informatics (ISCI 2013)
- 2013 IEEE Symposium on Wireless Technology & Applications (ISWTA) 2013
- 2013 IEEE International RF and Microwave Conference (RFM 2013)
- 2012 IEEE Asia-Pacific Conference on Applied Electromagnetics (APACE 2012)
- 2012 IEEE International Conference on Power and Energy (PECON 2012)
- 2012 IEEE Symposium on Computer Applications & Industrial Electronics (ISCAIE 2012)
- 2012 IEEE Student Conference on Research and Development (IEEE SCOREd 2012)
- 7th International Conference on Computing and Convergence Technology (ICCT 2012)
- 2011 IEEE Conference on Computer Applications & Industrial Electronics (ICCAIE 2011)

External Role/Membership/Services:

- Adjunct Research Fellow, Swinburne University of Technology Sarawak Campus - since 2014
- Judge, Young Inventors Challenge, organized by Association of Science, Technology and Innovation (ASTI), since 2014
- Judge, CodeCamp48 2014, organized by Harz University of Applied Sciences, 1st Aug - 3rd Aug 2014
- MyUniBus Shuttle Bus tracking web portal – System designer and maintainer, Aug 2013 to Sept 2014

## Recent and Completed Externally Funded Research Projects

- Sep. 2014 - present **Principal Investigator - A crowd-source based mobile application system for future smart city**, *Sunway-Lancaster Small Grant Scheme (£7500)*.
- Jul.2014 - present **Principal Investigator - Sunway Indoor GPS System**, *Sunway University- ITSSC MOU Collaboration R&D Grant (RM100,000)*.
- Jun. 2014 - present **Principal Investigator - Applying SAX-based Time Series Analysis to classify EEG signal using a COTS EEG device**, *Sunway Internal Grant scheme (RM31,600)*.
- May 2015

- Jul. 2014 – **Co-investigator - Digital Office**, *MDEC Innovation Voucher (RM 15,000)*.  
Oct. 2014
- Sep. 2013 - **Co-investigator - Assistive Caretaker: A model for recognition of challenging behaviors for special children**, *Swinburne Sarawak Research Grant 2013*.  
Aug. 2014
- Oct. 2011 - **Project Manager/ Principal Investigator - SEAM4US (Sustainable Energy mAnageMent for Underground Stations)**, *EU FP7 (Energy-Efficient Buildings) funded project. (Full duration of project - Oct. 2011 - Sept. 2014)*.  
Jan. 2013  
Website: <http://www.seam4us.eu/>
- Jan. 2009 - **Project Manager/ Principal Investigator - MATRIX (Middleware-Plattform für die Realisierung internetbasierter telemedizinischer Dienste)**, *German Federal Ministry of Education and Research (BMBF) funded project*.  
Mar. 2012  
Website: <http://www.forschungsprojekt-matrix.de/de/start.htm>
- Apr. 2006 - **Team member/ Co-investigator - S4ALL (Services for All)**, *EU ITEA/German Federal Ministry of Education and Research (BMBF) funded project*.  
Feb. 2008  
Website: <http://www.comtec.eecs.uni-kassel.de/s4all/>
- Oct. 2004 - **Team member/ Co-investigator - MobiLife**, *EU CORDIS FP6 funded project*.  
Dec. 2006  
Website: <http://www.ist-mobilife.org>

## Awards

- Jan. 2016 **Best research paper award at the 2016 6th International Conference - Cloud System and Big Data Engineering (Confluence) at Amity University, Noida, India.**
- Nov. 2014 **Special mention award in Sunway Group Innovation Challenge 2014, POTS for beans.**
- Nov. 2014 **Special mention award in Sunway Group Innovation Challenge 2014, Brownie Points.**
- Feb. 2014 **Silver Medal in Invention & Innovation Awards, Malaysia Technology Expo 2014 (MTEX2014), Smartphone Based Auxiliary System for Drivers.**
- Nov. 2013 **2013 UK-SE Asia Knowledge Partnership-Collaborative Development Awards 2013 (together with Assoc. Prof. Dr. Yau Kok Lim, Dr Pu Chuan Chin), Award: £2000 to support research visit to UK universities..**
- Nov. 2013 **Grand prize in Sunway Group Innovation Challenge 2013, The student-for-student (S4S) playground.**
- Nov. 2013 **2nd runner-up in Sunway Group Innovation Challenge 2013, The Sunway CarPool System.**

Oct. 2013 **1st prize for the MyUniBus project in the McKinsey Youth Leadership Academy 2013**, *Technical partner for the MyUniBus project, led the development of the realtime web-based bus tracking system.*

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## Professional Certifications

- 2016 Salesforce Sales Cloud Training and Service Cloud Essentials (SLS101, SLS201, SVC101 and SVC201)
- 2014 iTrain iOS Developer Certificate
- 2013 Huawei Certified Datacom Associate

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## Languages

- Malay **Fluent**
- English **Fluent**
- Mandarin **Native**
- German **Good**

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## Selected List of Publications

### Conferences and Workshops

- [C1] C. Toh and S. L. Lau, "Indoor Positioning using Existing Wi-Fi Infrastructure: A Case Study at a University Building," in *The 22nd International Conference on Virtual Systems and Multimedia (VSMM 2016)*, Oct. 17-20 2016.
- [C2] S. L. Lau, C. Toh, and Y. Saleem, "Wi-Fi Fingerprint Localisation using Density-based Clustering for Public Spaces: A Case Study in a Shopping Mall," in *2016 6th International Conference - Cloud System and Big Data Engineering (Confluence)*, Jan. 14-15 2016.
- [C3] S. L. Lau and S. M. S. Ismail, "Towards a real-time public transport data framework using crowd-sourced passenger contributed data," in *First International Workshop on Mobile and Context Aware Services (MOCS2015)*, Sept. 6-9 2015.
- [C4] Z. Q. Ik, S. L. Lau, and J. B. Chan, "Mobile Cataract Screening App Using a Smartphone," in *2015 IEEE Conference on e-Learning, e-Management and e-Services (IC3e 2015)*, Aug. 24-26 2015.
- [C5] K. Y. Tey and S. L. Lau, "Evaluation of unsupervised indoor localisation algorithm using real-environment data," in *2015 IEEE Conference on Wireless Sensors (ICWiSE 2015)*, Aug. 24-26 2015.
- [C6] S. L. Lau, A. Ahmed, and R. Zhunussov, "Towards an Unobtrusive COTS EEG-based Assistive Technology for Patients with Movement Disabilities: A Review," in *The 19th International Conference on Transformative Science and*

*Engineering, Business and Social Innovation (SDPS 2014)*, pp. 457–463, Society for Design and Process Science, 2014.

- [C7] Y. Xu, S. L. Lau, R. Kusber, and K. David, “DCCLA: Automatic Indoor Localization Using Unsupervised Wi-Fi Fingerprinting,” in *Modeling and Using Context* (P. Brézillon, P. Blackburn, and R. Dapoigny, eds.), vol. 8175 of *Lecture Notes in Computer Science*, pp. 73–86, Springer Berlin Heidelberg, 2013.
- [C8] S. L. Lau, “Comparison of orientation-independent-based movement recognition system using classification algorithms,” in *2013 IEEE Symposium on Wireless Technology and Applications (ISWTA)*, pp. 322–326, IEEE, 2013.
- [C9] S. L. Lau, Y. Xu, and K. David, “Novel Indoor Localisation using an Unsupervised Wi-Fi Signal Clustering Method,” in *Future Network and Mobile Summit 2011*, (Warsaw, Poland), pp. 1–8, Jun. 15-17 2011.
- [C10] S. L. Lau, I. König, K. David, B. Parandian, C. Carius-Düssel, and M. Schultz, “Supporting patient monitoring using activity recognition with a smartphone,” in *7th International Symposium on Wireless Communication Systems (ISWCS), 2010*, pp. 810 – 814, Sept. 19-22 2010.
- [C11] S. L. Lau and K. David, “Movement recognition using the accelerometer in smartphones,” in *Future Network and Mobile Summit 2010*, (Florence, Italy), pp. 1–9, Jun. 16-18 2010.

### Journal

- [J1] Z. Q. Ik, S. L. Lau, and J. B. Chan, “Towards the Design of a Mobile Cataract Screening Smartphone App,” *Jurnal Teknologi (Towards Advancement of Sustainable Computational Technology)*, vol. 78, pp. 111–120, Dec. 2016.
- [J2] T. Y. Sim, S. L. Lau, P. Zipf, and K. Kimm, “Design and development of a supported tiered software for teaching and learning using a connected mobile learning application,” *World Applied Sciences Journal 30 (Innovation challenges in Multidisciplinary Research & Practice)*, vol. 30, pp. 247–255, 2014.
- [J3] K. David, S. L. Lau, and B. N. Klein, “Social Link App - A New Communication Paradigm Empowering Mobile Users,” *IEEE Vehicular Technology Magazine*, vol. 6, pp. 80–87, Sept. 2011.
- [J4] S. L. Lau, N. Klein, A. Pirali, O. Droegehorn, and K. David, “Evaluation of the technology agnostic service creation approach,” *Electronic Communications of the EASST (ECEASST)*, vol. 27, 2010.
- [J5] S. L. Lau, N. Klein, A. Pirali, I. König, and K. David, “Implementation of a user-centric context-aware playground,” *Electronic Communications of the EASST (ECEASST)*, vol. 17, 2009.



## Books/Book Chapters

- [B1] M. K. T. Tee, B. T. Lau, H. Siswoyo Jo, and S. L. Lau, “Potential of Human Tracking in Assistive Technologies for Children with Cognitive Disabilities,” in *Supporting the Education of Children with Autism Spectrum Disorders* (Y. Kats, ed.), ch. 13, pp. 245–266, IGI Global, 2016.
- [B2] S. L. Lau, A. Ahmed, and Z. Ruslan, “A Review for Unobtrusive COTS EEG-Based Assistive Technology,” in *Assistive Technologies for Physical and Cognitive Disabilities* (B. T. Lau, ed.), ch. 13, pp. 262–277, Hershey, PA: IGI Global, 2015.
- [B3] S. L. Lau, *Towards a user-centric context aware system: empowering users through activity recognition using a smartphone as an unobtrusive device*. kassel university press GmbH, Jan. 2012.
- [B4] S. L. Lau and K. David, *Enabling Context Aware Services in the Area of AAC*, ch. 6, pp. 159–192. IGI Global, Feb. 2011.
- [B5] A. Battestini, A. Flanagan, P. Floréen, S. Gessler, J. Koolwaaij, E. Lagerspetz, S. L. Lau, M. Luther, M. Martin, J. Millerat, B. Mrohs, P. Nurmi, M. Paolucci, J. Robinson, J. Suomela, and M. Wagner, *Enabling Technologies for Mobile Services: The MobiLife Book*, ch. 4. Context Awareness and Management. John Wiley & Sons, Oct. 2007.
- [B6] D. Bonnefoy, M. Boussard, N. Brgulja, A. Domene, O. Drögehorn, G. Giuliani, R. Kernchen, S. L. Lau, J. Millerat, B. Mrohs, P. Nurmi, P. J. Ollikainen, M. Radziszewski, C. Räck, , M. Salacinski, A. Salden, and M. Sutterer, *Enabling Technologies for Mobile Services: The MobiLife Book*, ch. 5. Multimodality and Personalisation. John Wiley & Sons, Oct. 2007.