

Dr.-Ing. Sian Lun Lau

curriculum vitae

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📌 Sian Lun Lau
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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 with Honours in Electronic and Telecommunications Engineering**, *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.
 - Same as responsibilities listed above.
- Dec. 2014
- 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.
- Apr. 2002 - **Student Assistant**, *Chair for Communication Technology*, *University of Kassel*, Kassel, Germany.
Aug. 2004
- Taught and managed the CCNA course for undergraduate as well as post-graduate students at University of Kassel
 - Managed the CCNA lab infrastructure
- 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.

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.

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”*, Noorul Islam University
- September 2015 - Dr.-Ing (Informatik) (Viva) - Yaqian Xu - *“Autonomous Indoor Localization Using Unsupervised Wi-Fi Fingerprinting”*, University of Kassel

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 Lectures:

- 25th August 2017, Karachi, Pakistan - Invited keynote speaker talk “*Empowering and Enabling a Sustainable Smart City through IoT and IoP*”, 2017 2nd International Conference on Emerging Trends in Engineering, Sciences and Technology (ICEEST 2017), Iqra University, Karachi, Pakistan
- 17th July 2017, Kassel, Germany - Invited talk “*Bandar Sunway: Towards a Sustainable Smart City*”, ITeG Research Talk, University of Kassel, Kassel, Germany
- 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.*

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

Languages

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

Selected List of Publications

Conferences and Workshops

- [C1] A. Jahn, D. Kroll, S. L. Lau, and K. David, "An Activity History Based Approach for Recognizing the Mode of Transportation," in *2017 IEEE Conference on Open Systems (ICOS)*, (Miri, Sarawak, Malaysia), 2017.
- [C2] 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.
- [C3] 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.
- [C4] 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.
- [C5] 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.
- [C6] 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.

- [C7] 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.
- [C8] 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.
- [C9] 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.
- [C10] 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.
- [C11] 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.
- [C12] 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] J. C. Quiroz, A. Banerjee, S. M. Dascalu, and S. L. Lau, "Feature Selection for Activity Recognition from Smartphone Accelerometer Data," *Intelligent Automation & Soft Computing*, vol. 23, no. 0, pp. 1–9, 2017.
- [J2] 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.
- [J3] 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.
- [J4] 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.
- [J5] 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.

- [J6] 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.