

Teaching Statement – Kwan Hui LIM

1. Teaching Philosophy

My teaching philosophy emphasizes a student-centered, participatory learning environment that equips students with rigorous technical foundations in Computer Science, Information Systems, Artificial Intelligence and Data Science, while also nurturing transferable skills such as critical thinking, teamwork, and communication. I believe that computing education must prepare students not only to master advanced algorithms and analytical methods but also to apply them effectively in solving complex, real-world challenges in business, government, and society. I achieve this through a combination of interactive learning, hands-on projects, and dedicated mentorship.

Interactive and Collaborative Learning. Students learn best when they are active participants in the learning process. I engage students through group activities, coding exercises, peer-to-peer discussions, and hands-on projects. I also design projects and exercises that encourage students to collaborate closely and present their work, mirroring professional practice. To extend realism, I incorporate technology such as AI agents to simulate collaboration with stakeholders from other disciplines, replicating the kinds of interdisciplinary interactions students will encounter in the workplace. This approach helps students connect technical concepts with authentic challenges, fostering collaboration, problem-solving, and communication skills that are essential for professionals navigating digital transformation and organizational innovation in the real-world.

Hands-On and Applied Learning. Applied learning is central to my teaching. In courses such as Artificial Intelligence, students built applications ranging from chatbots powered by large language models to recommender systems for tourism, bridging theory with practice. In co-developing *Computational Data Science*, I helped design a curriculum that integrates statistical methods, machine learning, and large-scale data processing to prepare students for industry and research. When I took over leadership of the *Artificial Intelligence* course, I significantly improved student experience and outcomes, raising the course rating from 3.6 to 4.2 in a single year. These results affirm the effectiveness of an applied, project-driven pedagogy.

Beyond undergraduates, I have also taught extensively in continuing education and professional training. At SUTD Academy, I developed and delivered courses such as *Artificial Intelligence for Managers*, *Generative AI for Business*, *Introduction to Natural Language Processing*, *Data Science and Decision Making*, *AI Basics for Productivity*, and others. Across both undergraduate and professional teaching, I have taught and trained over 1000 students, reflecting both the breadth and scalability of my teaching practice.

Mentorship and Professional Development. I view teaching as inseparable from mentorship. I have supervised to completion a total of 6 PhD students, 10 Masters students, over 50 undergraduate students in research projects and numerous more in their coursework

projects. Many of these projects have resulted in peer-reviewed publications in leading conferences and journals, and several of my students have progressed to successful careers in academia, consulting, and industry. In addition, I have served as the Chair of 8 PhD Examination Committees and as a member of over 50 PhD Examination Committees, further demonstrating my deep involvement in graduate education. These experiences underscore the lasting impact of mentorship that integrates technical rigor with societal and industry relevance. I look forward to continuing this mentorship by supporting students in both their academic and professional development.

2. Teaching Feedback

My teaching effectiveness is reflected in consistently high and improving student feedback scores, with instructor rating **rising from 4.4/5.0 in my first course (2018) to 4.8/5.0 in my most recent course (2024)**. Students regularly highlight my ability to explain complex concepts clearly, my commitment to fostering engagement through applied projects, and my accessibility as a mentor. Selected anonymous student comments include:

- *“Excellent. One of the best lecture series I have had in SUTD so far.”*
- *“Professor Kwan Hui is an excellent teacher who has the ability to explain complex concepts in a clear and concise manner. I deeply appreciate his kind and approachable nature, which makes it easy for me to ask him any questions and seek his guidance. I am particularly thankful for his effort in recording lectures, which allows me to catch up on classes that I may have missed.”*
- *“prof kwan hui is very approachable and dedicated; he genuinely encourages queries, and really takes the time to format proper responses to our queries which not just clarifies our doubts, but also stimulates us to think deeper about the concept”*
- *“Professor Lim Kwan Hui is able to make complex theories easy to understand by students. I was so glad when he took over [Redacted for privacy] class from [Redacted for privacy], whose lessons are extremely confusing and intimidating.”*
- *“Kwan Hui is very attentive and knowledgeable in the field of Artificial intelligence, We received lots of meaningful feedback. He is meanwhile a very kind professor who makes work pleasant.”*
- *“Sometime before the semester break I walked out of my [Redacted for privacy] lecture feeling frustrated that I don't understand a single thing that the "professor" was taking about, then I attend your lecture which happened to be covering the same topic, and was amused that the same topic can actually be covered in a so much more elegant manner! I really appreciate how your lectures are well-structured, allowing students see the big picture, and focus on practical and hands-on applications instead of dwelling on trivial mathematical derivations. SUTD really needs more professors like you.”*
- *“Prof Kwan Hui is a great and passionate teacher, and it is a joy to learn from him”*
- *“Professor Kwan Hui was very competent and kind to students. He was also very approachable and was often free to respond to queries about the project.”*
- *“[Redacted for privacy]. The teaching materials uploaded on blackboard were timely, and there were no mistakes in any of them. This shows that he had gone through and vetted every single thing (slides, assignments) that was distributed to us. Prof Kwan Hui is a gem, and is an inspiration for other teaching staff to follow.”*

These outcomes affirm the success of my student-centered and practice-oriented approach. More information about the courses I have taught can be found in my CV.

3. Educational Service Leadership

In addition to classroom teaching, I have held several key educational leadership roles that shaped undergraduate, postgraduate and AI education at SUTD.

Chair, ISTD Undergraduate Committee [since 2020]. I lead a team of 12 faculty and 3 administrative staff in managing a wide range of responsibilities including curriculum development, CSD tracks and minors management, course scheduling, global exchange course mapping, Capstone matters, and custom track approvals. In this role, I also oversaw the successful renaming of the B.Eng (Information Systems Technology and Design) to B.Eng (Computer Science and Design), led outreach activities to prospective students, and guided the design and implementation of new curricula that support our institutional pivot to becoming a "Design AI University." In particular, I spearheaded the development of the first *Design AI Minor* and the inaugural *Design AI Second Major*, expanding opportunities for students to gain expertise at the intersection of design, AI, and systems thinking.

Lead of the AI Curriculum Review Taskforce [since 2019]. I organize regular reviews of our AI track, AI minor, and AI-related courses (including Artificial Intelligence, Machine Learning, Deep Learning, Computer Vision, and Natural Language Processing). My responsibilities include ensuring that course content is up-to-date and industry-relevant, that knowledge progression is well-sequenced, and that overlap between courses is minimized. Under my leadership, the AI minor underwent two major revisions (2020 and 2024), AI competencies were mapped across the broader CSD curriculum, and AI content was integrated into other programmes and pillars across the university.

ISTD Lead for Engineering Accreditation [since 2020]. I led the accreditation efforts of our B.Eng (Computer Science and Design) program, resulting in a successful accreditation in 2021 and am currently preparing for the next accreditation in 2026. This work includes coordinating major audits of curriculum, organization, materials and delivery by the Engineering Accreditation Board (EAB) under the Institution of Engineers, Singapore. In addition, I led two major benchmarking exercises with peer Computer Engineering and Computer Science programs, as well as supporting the renaming of the B.Eng (Information Systems Technology and Design) to B.Eng (Computer Science and Design), both of which were key elements of the accreditation requirements.

Academic Programme Director, Master of Science in Technology and Design (Artificial Intelligence) (MTD(AI)) [since 2025]. I led the conception, proposal, and development of the MTD(AI) programme, an interdisciplinary postgraduate degree integrating artificial intelligence with design innovation to address real-world challenges. As the inaugural Programme Director, I oversaw the curriculum design, coordination across academic and administrative units, and alignment with institutional and national priorities for AI education. This role has allowed me to translate my teaching philosophy into programme-level practice, fostering a new generation of technologically grounded and design-oriented AI professionals.

Through these leadership roles, I have demonstrated a strong commitment not only to teaching excellence but also to building robust academic programs that adapt to emerging fields and equip students for the future of work. My service contributions reflect a holistic view of education that combines classroom excellence, curriculum innovation, and institutional advancement.

4. Future Teaching Plans

Looking ahead, I aim to strengthen my teaching portfolio by advancing courses and curricula that blend technical expertise with real-world impact:

- **Core and Advanced Courses:** I plan to teach and update courses in Artificial Intelligence, Machine Learning, and Data Science & Analytics, while designing advanced electives in areas such as Large Language Models, Recommender Systems, and Responsible AI.
- **Interdisciplinary and Applied Courses:** I will develop offerings in Computational Social Science, Analytics for Urban and Organizational Innovation, and AI for Operations and Decision-Making. These courses will bridge technical rigor with societal relevance, addressing challenges in digital platforms, misinformation, FinTech, and healthcare analytics.
- **Industry and Research Integration:** I will incorporate consultancy-style projects, collaborations with government/industry partners, and research-driven learning into my courses. By engaging students in authentic problem-solving contexts, I aim to strengthen their skills in technical implementation, stakeholder communication, and project leadership.
- **Professional Skills and Inclusive Learning:** Beyond technical mastery, I will emphasize teamwork, communication, ethics, and inclusivity as explicit learning outcomes. I am committed to creating a supportive classroom environment that values diverse perspectives and prepares students to be adaptable, ethical leaders in a data-rich global economy.

My approach, rooted in active learning, applied projects, mentorship, and curriculum innovation, aligns with the mission of advancing computer science and information systems education. By combining expertise in AI, data science, urban analytics and social computing with a strong record of educational leadership, I aim to prepare students to thrive as skilled, ethical, and impact-driven professionals who can shape the future of technology, organizations and society.