



NUS COMPUTING

AI-X: INDUSTRY DAY

in partnership with IMDA's Technical Sharing Session




Speaker Line-up & Abstracts

1	<p>Xu Xinxing</p>  <p>Principal Research Manager, Microsoft Research Asia</p>	<p>Title: Building Industry Intelligence with Generative AI</p> <p>This talk explores how Generative AI is revolutionising industrial sectors by enabling domain-specific applications in Healthcare, Applied Data Science and Design. We highlight Microsoft Research Asia's flagship initiatives, including MIRA (Medical Time Series Foundation Model), RD-Agent, and LLM for Design, which embed domain knowledge and structured data to advance medical prediction, accelerate R&D, and enable informed decision-making. We share our vision for scalable, customisable GenAI platforms that drive real-world business transformation.</p>
2	<p><u>Anthony Tung</u></p>  <p>Professor, School of Computing</p>	<p>Title: Being Small in the Era of Large Models: Enabling Prudent AI with Lightweight, Just-in-Time AI Boxes</p> <p>Abstract: In an era dominated by massive foundation models, smaller players risk being left behind—unable to afford the scale, data, or manpower that large AI systems demand. This talk introduces the concept of Prudent.AI—an approach that emphasizes right-sized, lightweight, and explainable intelligence delivered through just-in-time, Plug-and-Play AI Boxes. Focusing on applications like early anomaly detection in multivariate time series, we demonstrate how our AI Boxes use sparse data, minimal compute, and human-guided refinement to detect rare but critical events. The architecture integrates symbolic reasoning, data-driven refinement, and secure edge deployment, showing how being small can actually be a strength in resource-constrained settings. Through this, we reimagine how organizations can adopt AI that is transparent, agile, and sustainable.</p>

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3	<p>Victor Liang</p>  <p>Head of Data Science, Geo Services, Grab</p>	<p>Title: Grab</p> <p>Abstract: In this talk, Mr.Victor.Liang.will.share.how.Grab.has.been.leveraging.the.latest.advancements.in.AI.to.enhance.our.super_app.experience.-.not.only.for.their.consumers.but.also.for.their.driver_partners;Additionally?how.AI.has.transformed.the.way.they.build.and.innovate.-.enabling.their.teams.to.boost.productivity?accelerate.product.development?and.conduct.experiments.at.scale.with.greater.speed.and.precision;</p>
4	<p>Yang Jun Tao</p>  <p>Solutions Architect, Nvidia</p>	<p>Title: Accelerating science with AI</p> <p>NVIDIA's computational platforms and AI tools are enabling researchers to accelerate their work across biology, chemistry, physics, and climate science. Today, we'll explore some of the solutions NVIDIA's developing for scientific research, and what this means for the future of discovery</p>
5	<p>Dimitri Bintein</p>  <p>Technology Director, AI CoE NCS</p>	<p>Title: Managing Probabilistic AI in a Deterministic Enterprise</p> <p>How probabilistic AI models can be adapted to meet deterministic enterprise requirements through a structured approach that combines knowledge governance, human oversight, and controlled automation. It outlines the creation of domain-specific AI agents operating on curated, traceable data, monitored through evaluation datasets to ensure accuracy and continuous improvement. The work advances from conversational assistance to agentic capabilities, incorporating structured human input, context engineering for traceability, and retrieval methods that reason, verify, and justify outputs. A defined evaluation framework measures performance, accuracy, control, maintenance effort, and cost to guide capability progression. The result is a scalable, evidence-based model for deploying AI with explainable, repeatable, and trusted behaviour in complex organisational environments.</p>

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6	<p><u>Suranga Nanayakkara</u></p>  <p>Associate Professor, School of Computing</p> <p>and</p> <p>Takahiro Masuda</p>  <p>Researcher, Asahi Quality & Innovations</p>	<p>Title: EmoDrink: Enhancing Human Well-being through Beverages and Technology</p> <p>Abstract: In this talk, we will first share the Augmented Human Lab's vision of designing novel human-computer interfaces—where technology is not treated as a separate tool but as a seamless extension of the human body, mind, and identity. We will then highlight EmoDrink, a collaborative project developed with Asahi Quality.™. Innovations Ltd. EmoDrink is a smart system that helps people maintain a positive emotional state through beverages. We will present some early stage results and outline directions for future work.</p>
7	<p>Thia Kai Xin</p>  <p>Vice President, Head of AI and Analytics, ST Engineering</p>	<p>STE's Physical AI Research Translation</p>

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8	<p><u>Chang Yi-Jun</u></p>  <p>NUS Presidential Young Professor, School of Computing</p>	<p>Title: Distributed Shortest Path Computation in Large-Scale Networks</p> <p>Abstract: Shortest path computation is a cornerstone of computer science. Classical algorithms such as those of Dijkstra and Bellman-Ford developed in the 1960s have long been standard material in computer science curricula and remain essential in practice from Internet routing protocols to real-time navigation services like Google Maps.</p> <p>Despite its long history, the problem remains vibrant. Modern applications demand efficient shortest path computation on massive graphs under stringent time and resource constraints. Emerging computational models including parallel, distributed and streaming settings introduce new challenges that classical algorithms cannot address.</p> <p>In this talk, I will discuss recent advances in designing algorithms suited to these modern settings including our recent work »Improved All Pairs Approximate Shortest Paths in the Congested Clique« (with Hong Duc Bui, Shashwat Chandra, Michal Dory and Dean Leitersdorf) presented at PODC.8680;</p>
9	<p><u>Lin Shao</u></p>  <p>Assistant Professor, School of Computing</p>	<p>Title: Unified Representation of Robot and Object Interaction for Cross-Embodiment Dexterous Grasping</p> <p>Walk into any modern warehouse or high-tech factory and you'll find robots moving with impressive precision. Despite decades of progress, robots still have trouble with what might seem like a simple task: grasping objects as reliably and flexibly as a human hand. Introducing D(R, O) Grasp: A Unified Approach that promises to bring human-like dexterity within reach of robotic hands. It combines deep learning with a novel spatial representation that allows robots to learn grasping strategies that are fast and accurate.</p>

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10	<p><u>Freddy Lim</u></p>  <p>Assistant Professor, School of Computing</p>	<p>Title: Consumer analytics in loyalty programs</p> <p>Abstract: Loyalty programs have become powerful tools for firms to strengthen customer relationships and drive revenue growth. In this short talk, I will share several collaborative projects with industry partners that examine how consumers engage with loyalty programs. These studies reveal interesting behavioral patterns and generate actionable insights for program design and pricing strategies.</p>
11	<p><u>Tan Zhi Xuan</u></p>  <p>NUS Presidential Young Professor, School of Computing</p>	<p>Topic: Scaling Cooperative Intelligence via Rational AI Engineering</p> <p>Abstract: How can we build cooperative machines that model and understand human minds – machines that assist us with our goals? coordinate on shared plans? infer the intentions behind our words? and even learn our norms and values? This talk introduces an approach to building trustworthy AI assistants and cooperators called rational AI engineering. By designing AI agents with explicit probabilistic models of their social world? then using probabilistic programming and model-based planning to automate rational Bayesian inference and assistive decision-making? we can achieve real-time goal recognition? grounded understanding of ambiguous language? and uncertainty-aware assistance? while attaining higher reliability and lower cost than purely LLM-based solutions. I will present the key technical innovations that enable this approach to scale? alongside ongoing research on applications such as browser agents and smart co-players in video games.</p>

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8	<p><u>Jane E</u></p>  <p>Assistant Professor, School of Computing</p>	<p>Title: Interactive Computational Guidance for Developing Expertise</p> <p>Abstract: Computer scientists have long pursued the vision of human-AI collaboration that augments human capabilities and intellect. Prof. E. Jane Little's work contributes to this vision by asking: How can computational tools not only help users complete tasks? but also support the development of domain expertise in the process?</p> <p>She will explore these questions through some of my past work that investigates this question in domains of artistic creativity. This work is inspired by the fact that expert artists have trained their eyes to see in ways that embed their expert domain knowledge— in this case? core artistic concepts. Her work designs creativity tools that leverage these expert structures to help novices develop this expert-like artistic vision— specifically through providing guidance to scaffold their design processes. She will discuss how this approach begins to address a broader question: How can systems scaffold? rather than substitute? the development of expertise?</p>
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