

SEMINAR ANNOUNCEMENT

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
COLLEGE OF DESIGN AND ENGINEERING

Website: <https://cde.nus.edu.sg/ece>

Area: Signal Analysis & Machine Intelligence (SAMI)

Host: Dr Xu Yuecong

TOPIC	:	How can AI build interactive worlds - and write the code that brings new ideas to life?
SPEAKER	:	Dr Jin Yeying Staff Researcher and Research Lead, Tencent Singapore
DATE	:	Wednesday, 14 October 2026
TIME	:	3:00PM to 4:00PM
VENUE	:	E3-06-08

ABSTRACT

Recent advances in generative AI are creating new opportunities to build interactive virtual worlds and translate ideas into executable software. Achieving these goals requires models that go beyond generating plausible visual content or isolated code snippets. Interactive world models must respond precisely to actions, preserve consistent states, and follow game mechanics, while coding agents must translate user intentions into functional implementations. These challenges motivate research into controllable environment generation and AI-assisted software development.

This seminar presents ongoing research at Tencent Singapore in two complementary directions: world models and coding agents. The first part explores generative models of interactive environments, focusing on action control, state consistency, controllable non-player character (NPC) behaviour, and generalization across games. Drawing on recent work including H3-World, WorldMind, ReactiveGWM, StatePlay, and SCOPE, the presentation discusses approaches and challenges in modelling how virtual environments evolve in response to user and agent actions. The second part introduces research on AI agents for programming and software development, including GameCrafter, examining how these agents can support the implementation of new ideas through code.

The discussion highlights current research questions and practical considerations in developing these systems, connecting advances in generative modelling with interactive applications. The seminar concludes with an overview of opportunities for students to contribute to these research directions, including research internships with Tencent Singapore.

BIOGRAPHY

Dr. JIN Yeying is a Staff Researcher at Tencent, where she leads research in world models, agentic AI, and AI-generated content for games. She also serves as Adjunct Faculty in the Department of Electrical and Computer Engineering at the National University of Singapore (NUS). She received her PhD from NUS under the supervision of Professor Robby T. Tan, and previously held a research internship at Adobe Research, working with Professor Connolly Barnes and Professor Eli Shechtman. She holds an MSc from NUS and a BEng from the University of Electronic Science and Technology of China.

Dr Jin's research spans interactive world models, coding agents, multimodal learning, vision-language models, and image and video generation. Her recent work focuses on persistent state modelling, consistency with game mechanics, and controllable agents in generative environments. Her research has appeared at leading international conferences, including CVPR, ICCV, ECCV, ICML, NeurIPS, ICLR, and ACL.

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