Vinay Kulkarni

TCS Research, Pune, India

Vinay Kulkarni is TCS Fellow at Tata Consultancy Services where he heads Software Systems & Services research. His research interests include digital twins, learning-native software systems, model-driven software engineering, and multi-agent systems. At present, he is exploring feasibility of continuous adaptation of enterprises through innovative integration of proven ideas from modeling & simulation, AI, and control theory. Prior work that focused on making software development an engineering endeavour has been used in industry for past several years and found way into international standards three of which Vinay contributed to in a leadership role. Fellow of Indian National Academy of Engineering, Vinay is an alumnus of Indian Institute of Technology Madras and serves as Visiting Professor at Aston University Birmingham, Middlesex University London, and Indian Institute of Technology Jodhpur.

Decision-making in the face of uncertainty using digital twins

Future is about large complex system of systems that need to operate in an increasingly dynamic environment where the changes cannot be deduced a-priori. Typically, a complex system of systems is understood in terms of its various parts and interactions between them. Moreover, this understanding is typically partial and uncertain from which the overall system behaviour emerges over time. With the overall system behaviour hard to know a-priori and conventional techniques for system-wide analysis either lacking in rigour or defeated by the scale of the problem, the current practice often exclusively relies on human expertise for analysis and synthesis leading to decision-making. This is time-, effort-, cost- and intellect-intensive endeavour. The talk will present an approach aimed at overcoming these limitations and will also illustrate its efficacy on a few representative real-world problems.

Thursday :: 10 August 2023 :: 3:30 PM

Kelkar Lab :: SPPU SCMS

Location

Broadcast

$_P$DS^Q :: Pune Data Science colloQuia

SPPU SCMS & Statistics

IISER Data Science

FLAME Computer Science