OPTiMA

OPTIMA SEMINAR SERIES

ENGINEERING SMART AND SECURE NETWORKS USING OPTIMISATION, GAME THEORY AND MACHINE LEARNING

An important development within the triangle of communication, computing, and cybersecurity is the convergence of communications and computing. Beyond classical networking and computing paradigms, novel communication architectures are emerging within the context of 5/6G that combine computing and communication seamlessly, often at the edge of the network, for increased flexibility and performance. Along with virtualisation in computing (e.g., Docker, Kubernetes) and wireless access networks (e.g., O-RAN), these new generation of architectures bring exciting research opportunities. This talk will present an overview of our group's latest research results combining modern machine learning with optimisation and game theoretic methods to engineer smart and secure networked systems. These powerful computational and mathematical tools lead to substantial improvements in efficiency, flexibility, and cybersecurity. Two specific examples from network resource allocation and cyber-physical system security will be presented to illustrate the adopted multi-disciplinary approach. The first example focuses on allocation of network and computing resources for QoS and real-time services. The second example investigates cybersecurity of networked autonomous platoons. The talk will conclude with a brief discussion on future research directions.

WED 3 NOV 4PM - 5PM AEST

ZOOM MEETING ID: 873 1557 5255; PASSWORD: 778635

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