



OPTiMA

ARC TRAINING CENTRE IN
OPTIMISATION TECHNOLOGIES
INTEGRATED METHODOLOGIES
AND APPLICATIONS

AI-BASED OPTIMISATION

OPTIMISING CODE: REDUCING ENERGY
CONSUMPTION, SIDE-CHANNEL LEAKAGE,
AND RUNTIME

Code executions can be “sub-optimal” in more than just one way. In this talk, I will outline three of them: (i) high energy consumption of smartphone apps negatively impacts the user experience, (ii) patterns emerging from the energy consumption can lead to leakage of secret information, and (iii) cryptographic cipher implementations are not customised to the target hardware. Optimisation engineers tackling these problems with actual devices have to overcome a surprisingly large number of challenges. I will outline overcome and open challenges as well as achievements, ranging from the characterisation of devices and the improvement of simulators, to the assembly-level minimisation the power-based information leakage and the assembly-level runtime minimisation.

Markus is an Associate Professor in the School of Computer Science at the University of Adelaide.



WED 15 SEP 4PM - 5PM AEST

ZOOM MEETING ID: 873 1557 5255; PASSWORD: 778635

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