

The Application of Heuristics in Engineering, Automation and Decision Support

Joint Electrical Institutions Sydney - Engineers Australia, IEEE, IET



ENGINEERS
AUSTRALIA

DATE & TIME

Thursday, September 11, 2014
5:30 pm for 6:00 pm start

VENUE

Engineers Australia - Harricks
Auditorium
Ground Floor, 8 Thomas Street,
Chatswood NSW 2067

COST

EA, IET, IEEE Members – Free
Students – Free
Non-members - \$30

CPD

Eligible for 1.5 Continuing
Professional Development hours.

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HOSTED BY

Joint Electrical Institutions Sydney



The Knowledge Network

Presentation by Dr John Ypsilantis, Managing Director and Principal Consultant Heuristics Australia

Summary

A significant number of engineering problems can be addressed by the application of experiential knowledge. Mathematical frameworks sometimes cannot be conveniently or adequately formulated for these problems, yet an experienced engineer can nevertheless “solve” them with the hindsight of experience.

Everyone develops a repertoire of heuristics – rules of thumb – as experience is gained in a given field. Sometimes these heuristics are counter-intuitive, sometimes they cannot be explained, and sometimes they may fail to achieve the desired result. However, for the most part, we all rely on our repertoires of heuristics as we conduct much of our day-to-day activities.

Paradoxically, when it comes to some areas of automation, computation or decision support, many engineers shy away from heuristic techniques altogether.

This seminar introduces some fundamentals of heuristic systems, their advantages and disadvantages. The aim is to de-mystify the use of heuristics in the development and commissioning of engineering systems.

Examples are drawn from a small selection of application areas, demonstrating that heuristic techniques may be successfully applied to certain engineering problems

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SPEAKER BIOGRAPHY

John Ypsilantis

John Ypsilantis received his BSc degree (1984) in Pure Mathematics and Computer Science, his BE (Electrical) (1986) degree with First Class Honours, and his PhD degree (1993) all from the University of Sydney. His doctoral research examined the application of machine learning to a number of decision support problems in power systems SCADA.

John is Managing Director and Principal Consultant at Heuristics Australia Pty Ltd, an electrical engineering and ICT consultancy based in Sydney.

John's specialisations and interests include automatic control, communications systems and SCADA for gas, water and electricity utilities, data communications and network security for utilities and the application of machine learning and intelligent systems to utility operations. John is a Member of the Institution of Engineers, Australia, Chartered Professional Engineer, Senior Member of the IEEE and Member of the Australian Computer Society. He has served as Secretary/Treasurer for the NSW chapter of the IEEE Power Engineering Society (2012) and currently serves as Secretary for the NSW Section of the IEEE in Australia.

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