

WESTERN SYDNEY UNIVERSITY



Nanoscale Organisation
and Dynamics Group

Medical Imaging of Things

Paul Hurley

Affiliation: Centre for Research in Mathematics and Data Science, WSU

Abstract

I will discuss a holistic framework which we call “Imaging of Things”, an abstraction that facilitates the development of algorithms for a wide range of data acquisition and imaging algorithms, from astronomy to PET, and acoustics to ultrasound. It is radically different way of thinking about imaging where images can be theoretically resolved up to the inherent resolution of the observing instrument.

A further aspect I will discuss is adapted image acquisition. Cognitive systems in nature learn and adapt to their surroundings. Focus is on what we care about, forgoing all deemed irrelevant (no one likes information overload). Machines that can chose how they acquire ultimately acquire faster and obtain more detail.

Then, I will show some imaging results from ultrasound and PET that have resulted from algorithms arising from this framework.

Profile

Paul Hurley has been professor of data science at Western Sydney University since the beginning of this year. Prior to that, he was a technical lead and senior research scientist at IBM Research in Zurich, Switzerland. He has a PhD from EPFL in Lausanne, Switzerland, and is a graduate of the National University of Ireland in Galway, Ireland. His research interests range from signal processing and algorithms (especially as applied to ultrasound, other modes of medical imaging, radio astronomy and other arrays) to data science, machine learning, information theory and abstract algebra. The art of commuting in Sydney has introduced him to the joy of podcasts, in particular “Hidden Brain”.

Staff and students at all levels are welcome to attend.

Venue and Time:

This talk will be held on Thursday 6 August at 3 pm via ZOOM

Meeting URL:

<https://uws.zoom.us/j/97178233231?pwd=TzFPU0p0QUk2d3lkR1F5Tk9NbVlqdz09>

Meeting ID: 971 7823 3231

Password: 303278

Enquiries:

Prof. William S. Price

0404 830 398

e-mail: w.price@westernsydney.edu.au