

## Paul Scott

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**Research interests:** Optimisation, renewable energy, power systems, smart grids, storage

### Current appointments:

- Research Fellow, ANU Research School of Computer Science 2016–Present  
Funded under CONSORT project: developing next generation network-aware optimisation for coordinating distributed energy resources.

### Academic qualifications:

- PhD, ANU Research School of Computer Science and NICTA Optimisation Research Group, 2016  
*Distributed Coordination and Optimisation of Network-Aware Electricity Prosumers*
- Bachelor of Engineering (1<sup>st</sup> class honours)/Bachelor of Science, ANU, 2010  
Majors in Electronics, Sustainable Energy and Physics  
Thesis: *Deflectometric Measurement of Solar Concentrating Mirror Panels*.

### Employment history:

- Postdoctoral Fellow, ANU Solar Thermal Group, 2015–2016  
Development of the concentrating solar thermal simulation tool SolarTherm.
- Research Assistant, ANU Centre for Sustainable Energy Systems, 2011–2012  
Work included manufacture and characterisation of flexible PV modules; development of weather station, microconcentrator controller and flux mapping systems; and calibration of a spectral response system.
- Research Assistant, ANU Solar Thermal Group, 2007–2011  
Contributed to the design, construction and research for the SG4 “Big Dish” project. Work included design of steam line and panel manufacturing control system; performing photogrammetry, flux mapping and environmental testing; and modelling dish off-axis reflections.
- Technical Assistant, CSIRO Energy Technology, 2010 July–October  
Internship where I contributed to microcontroller (8051) firmware debugging and design for heliostat motor drives; and mesh intercept algorithms for ray tracing software.

### Teaching and leadership:

- Guest lecturer for smart grids section of ANU Grid Integration course 2015–2017
- Guest lecturer for ANU Engineering course on PV technologies 2014
- Senior resident at ANU Fenner Hall providing pastoral care for 26 residents 2008

### Grants:

- Sylvie Thiébaux, Paul Scott, et. al, April 2016  
*CONSORT: Consumer Energy Systems Providing Cost-Effective Grid Support*, ARENA (Australian Renewable Energy Agency) R&D “industry-researcher collaboration” project,

involving ANU, TasNetworks, Reposit Power, The University of Sydney, and The University of Tasmania. Project awarded \$2.9M from ARENA over 3 years, complementing an \$5M contribution from partners.

**Scholarships/Awards:**

- Best paper award ACM e-Energy 2015
- CP Doctoral Program member 2013
- ANU Trendell Graduate Research Scholarship 2012  
*Each year awarded to one highly ranked domestic PhD applicant.*
- ANU NICTA PhD Supplementary Scholarship 2012
- ANU Engineering Research and Development Scholarship 2006
- UTAS Digby Fitzhardinge Memorial Prize 2005  
*Awarded for greatest proficiency in Physics 1.*
- UTAS Sir Richard Dry Exhibition 2005  
*Awarded for “excellent achievement in TCE Mathematics”.*
- UTAS The Peter Smith Tasmania University Scholarship in the Physical Sciences 2005
- UTAS Commonwealth Learning Scholarship 2005

**Relevant skills:**

Optimisation

- Mixed-integer linear programming (Gurobi) and non-linear programming (Ipopt)
- Stochastic programming
- Distributed optimisation

Computing

- Proficiency in Python, C and C++
- Experience with Javascript, Haskell, Java, MATLAB, PHP, IDL
- Proficiency with Linux

Power Systems/Energy

- Power flow modelling
- Concentrating mirror characterisation
- Photovoltaic cell characterisation
- Concentrating solar thermal system simulation

**Publications:**

- [1] P Scott, S Thiebaux, *Distributed multi-period optimal power flow for demand response in microgrids*, ACM e-Energy, Bangalore, India, 2015
- [2] P Scott, S Thiebaux, M van den Briel and P Van Hentenryck, *Residential demand response under uncertainty*, International Conference on Principles and Practice of Constraint Programming (CP), Uppsala, Sweden, 2013

- [3] M van den Briel, P Scott and S Thiebaut, *Randomized load control: A simple distributed approach for scheduling smart appliances*, International Joint Conference on Artificial Intelligence (IJCAI), Beijing, China, 2013
- [4] G Burgess, M Shortis and P Scott, *Photographic assessment of retroreflective film properties*, ISPRS Journal of Photogrammetry and Remote Sensing, 2011
- [5] G Burgess, P Scott, J Preston and K Lovegrove, *Management of dish concentrator off axis reflections*, Proceedings of Solar2010, 48th AuSES Conference, Canberra, Australia, 2010
- [6] P Scott and G Burgess, *Measurement of mirror panels using coloured pattern deflectometry*, Proceedings of SolarPACES 2010, Perpignan, France, 2010
- [7] J Pye, K Lovegrove, G Burgess, R Dunn, M Kingsland, P Scott and J Zapata, *Research on concentrating solar thermal systems at ANU*, Journal of the Japan Institute of Energy, 89 (4), 2010
- [8] G Burgess, P Scott and J Pye, *Spherical and asymmetric mirror panels for paraboloidal concentrators*, ISESAP 2008 (3rd International Solar Energy Society Conference, Asia Pacific region, 46th ANZSES Conference), Sydney, Australia, 2008