Tom Lodge

Research Fellow, Full-stack developer

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I am a Research Fellow and developer at **Nottingham University**. I have worked on a broad variety of projects, with a wide range of industrial partners and have built up expertise in technologies right across the stack, from low-level network infrastructure (building home routers) to front and backend web development. I'm also a director/lead developer for an early stage start-up that is developing software for high-rise residential communities. My doctorate investigated the utility of ad-hoc, short-range (Bluetooth) networks for large-scale data collection. My most recent work has centred on data capture (user network and location data) and visualisation.

Recent projects

IoT Databox EPSRC Funded 2015-present

Role: Researcher

This project is developing a clean-slate privacy-focused infrastructure to provide users with full control of their personal data. It is principally focused on IoT data; the number of devices that capture and record information about us is expected to rise to unprecedented levels, creating challenges around privacy and data liability. The project is a collaboration with ***Cambridge University***, ***Queen Mary, University of London*** **and various industrial partners.**

User Centric Networking European Union Funded 2014-present

Role: Researcher

This project is a multi-institution collaboration (***Technicolor, Eurecom, Fraunhofer, Intamac, University of Cambridge, University of Nottingham, Martel Consulting, Inria, Portugal Telecom***) that is developing content and recommendation systems based upon user networking behaviour. In collaboration with ethnographers, I have built data visualisation tools (d3.js) that support detailed analysis and tagging of network data being collected in households across France and the UK.

Communities in the Clouds Research Councils UK Funded 2014

Role: Principal Investigator

I ran a pilot project in collaboration with ***Microsoft Research*** that investigated the role that technology might play in supporting residents living in high-rise and high-density communities. The project was composed of several strands: data analysis and visualisation (of forum data), ethnography and a workshop with industry professionals. One exciting outcome from the project has been the chance to run technology trials in a large flagship East London housing estate.

Becoming Dataware Horizon Digital Economy Funded 2012-2014

Role: Researcher

This project investigated how users might take greater control and ownership of their 'digital footprint' by considering a locally controlled hosted and managed personal data store that permits constrained queries by third parties (energy companies/supermarkets etc). I developed and extended code (python) to create a proof-of-concept home router that collected energy and network data which could be interrogated by (OAuth) permitted third parties. The software ran on a small form factor, Linux arm computer (dreamplug).

Homework EPSRC Funded 2009-2012

Role: Researcher

A four-year, five-institution (***Nottingham, Imperial, Glasgow, Nottingham, Microsoft and BT***) collaboration looking at the design and provision of tools to improve support for home networking. I was part of a team that built a Linux router (running Nox/Open vSwitch) and developed two iphone/ipad apps that supported novel visualisation and control of a local home network.

Employment

University of Nottingham Horizon Digital Economy 2013-current

Research Fellow

Queen Mary, University of London Open & Distance Learning 2002-2005

Research Fellow

University College London Networks and Multimedia Research 2000-2002

Research Fellow

Education

University of Nottingham Phd 2007-2012

Opportunistic Data Collection in People Centric Sensor Networks

University College London MSc 1999-2000

Data Communications Networks and Distributed Systems

Award: **Distinction**

Queen Mary, University of London BSc 1996-1999

Computer Science

Award: **First Class**, Drapers Award for *'outstanding academic achievement'*

Key Tech Skills

Frontend

React
Redux/Flux
Knockout
D3

iOs (Objective-C)
Android (Java)

SASS LESS
Webpack Grunt Gulp
HTML CSS

Backend

Node.js
Flask/Bottle (Python)
Jekyll

Javascript
Java
Python
Objective-C
PHP
Drupal

Devops

Amazon EC2
Heroku
Docker
Vagrant

Apache
Nginx
Varnish
Haproxy
Squid

Mysql
Postgresql
SQLite
MongoDB
Neo4j

see: http://github.com/tlodge

Publications

Crabtree, A., Rodden, T., Tolmie, P., Mortier, R., Lodge, T., Brundell, P. and Pantidi, N., 2015. **House rules: the collaborative nature of policy in domestic networks.** *Personal and Ubiquitous Computing, 19(1),* pp.203-215.

Lodge, T., Rodden, T. and Mortier, R., 2013, September. **Communities in the clouds: support for high-rise living.** *In Proceedings of the 2013 ACM conference on Pervasive and ubiquitous computing adjunct publication* (pp. 829-836). ACM.

Mortier, R., Houghton, R., Skatova, A., Wagner, C., Lodge, T., Shao, J., Goulding, J., Madhavapeddy, A. and Crowcroft, J., **Becoming Dataware.**

Skatova, A., Johal, J., Houghton, R., Mortier, R., Bhandari, N., Lodge, T., Wagner, C., Goulding, J., Crowcroft, J. and Madhavapeddy, A., 2013. **Perceived risks of personal data sharing.** *Proc. Digital Economy: Open Digital* (Nov. 2013).

Lodge, T., 2012. **Opportunistic data collection in people-centric sensor networks.** (Doctoral dissertation, University of Nottingham).

Mortier, R., Rodden, T., Tolmie, P., Lodge, T., Spencer, R., Sventek, J. and Koliousis, A., 2012, October. **Homework: Putting interaction into the infrastructure.** *In Proceedings of the 25th annual ACM symposium on User interface software and technology* (pp. 197-206). ACM.

Pediaditakis, D., Gopalan, A., Dulay, N., Sloman, M. and Lodge, T., 2012, July. **Home network management policies: Putting the user in the loop. In Policies for Distributed Systems and Networks** (POLICY), *2012 IEEE International Symposium* on (pp. 9-16). IEEE.

Mortier, R., Rodden, T., Lodge, T., McAuley, D., Rotsos, C., Moore, A.W., Koliousis, A. and Sventek, J., 2012, January. **Control and understanding: Owning your home network.** *In Communication Systems and Networks (COMSNETS), 2012 Fourth International Conference* on (pp. 1-10). IEEE.

Mortier, R., Bedwell, B., Glover, K., Lodge, T., Rodden, T., Rotsos, C., Moore, A.W., Koliousis, A. and Sventek, J., 2011, August. **Supporting novel home network management interfaces with OpenFlow and NOX.** *In ACM SIGCOMM Computer Communication Review* (Vol. 41, No. 4, pp. 464-465). ACM.

Sventek, J., Koliousis, A., Sharma, O., Dulay, N., Pediaditakis, D., Sloman, M., Rodden, T., Lodge, T., Bedwell, B., Glover, K. and Mortier, R., 2011, May. **An information plane architecture supporting home network management.** *In Integrated Network Management (IM), 2011 IFIP/IEEE International Symposium* on (pp. 1-8). IEEE.

Flintham, M., Greenhalgh, C., Lodge, T., Chamberlain, A., Paxton, M., Jacobs, R., Watkins, M. and Shackford, R., 2011, November. **A case study of exploding places, a mobile location-based game.** *In Proceedings of the 8th International Conference on Advances in Computer Entertainment Technology*(p. 30). ACM.

Lodge, T. and Radenkovic, M., 2007, March. **Towards mass scale environmental monitoring by the public.** *In Proceedings of the Third IASTED European Conference on Internet and Multimedia Systems and Applications (pp. 69-74).* ACTA Press.

Flintham, M., Greenhalgh, C., Greenman, A., Lodge, T., Mortier, R., Jacobs, R., Watkins, M. and Shackford, R., **Towards a Platform for Urban Games.**

Radenkovic, M. and Lodge, T., 2006. **Engaging the public through mass-scale multimedia networks.** *IEEE MultiMedia*, (3), pp.12-15.