

Dr DANIEL GOOCH
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Education

- 2009 – 2013 Ph.D in Computer Science, University of Bath. Title: Designing Communication Devices for Long Distance Dating Relationships. Supervised by Dr Leon Watts.
- 2008 – 2009 MSc degree in Advanced Computer Systems: Human Computer Interaction, University of Bath
Graduated with Distinction.
- 2004 – 2008 BSc degree in Computer Science, University of Bath
Graduated with first class honours and distinction in Industrial Placement at Hewlett Packard Labs, Bristol.

Professional Research Experience

May 2015 – Today The Open University

Research Associate

I currently lead the Citizen Innovation workpackage of the HEFCE-funded project MK:Smart (<http://www.mksmart.org>), being responsible for the research, administrative and financial aspects of the workpackage. This research is based on the philosophy that the people who live in a community should have a role in deciding how that community runs. The focal point of the research is an online platform (www.ourmk.org) which allows us to crowd-source ideas about improving the city and select projects we want to support and fund. The research goals include exploring how to coordinate citizen engagement and activities within Smart City Projects as well as investigating the challenges and opportunities of participatory and citizen-centric design at an Urban Scale. Our MK has been listed as one of the top 5 crowdfunded initiatives in government affairs by Idox¹. I have ensured that the team has undertaken a large number of impact-style activities as part of the initiative, engaging with at least 10,000 people. Further details can be found in the Impact and Public Engagement section of my CV.

Beyond my own duties, I have supported the Education and Energy team develop a publication strategy and assisted with both research activities and writing papers for high-quality venues, particularly ACM CHI. I have been largely responsible for managing a variety of administrative responsibilities within the project including the production of quarterly and annual reports on the activities of three work packages for HEFCE and coordinating the legal framework for the funding of citizen-led projects. In particular when the lead investigator on the project left the Open University for a different post, I successfully managed the transition to a new management team by taking a lead on organisational matters. I have built up a close network of collaborative partners in the local community, including MK Council, numerous smaller charities and local businesses, and have an excellent working relationship with the 3rd sector organisation Community Action: MK. I have also assisted in integrating some of the research from Our MK into the OU module TM356, “Interaction design and the user experience”.

May 2014 – Today University of Bath

Visiting Research Fellow

I currently hold a visiting Research Fellowship on a grant I co-authored for The Leverhulme Trust titled “Investing care and appreciating effort in the use of personal communication technology”. The PI has taken the administrative lead while I have worked closely with the RA on the project to develop a research strategy, analyse the collected data, develop a series of prototypes and write up the findings for academic publication.

February 2013 – April 2015 University of Birmingham/Institute of Education/ University College London

Research Fellow

I was employed on the EU-funded project iLearnRW (<http://www.ilearnrw.eu>). The project aimed to develop a software suite for children with dyslexia, utilising both a reader and a game to target a child’s individual difficulties. My core role was to assist with the design of the User Modelling aspect of the project, ensuring that the help each child receives is appropriate for their current difficulties. Given my skill set, I became involved in the broader design of the software, acting as a bridge between the design and development teams. I assisted in the formative evaluation of the software prior to co-leading the UK summative evaluation. I had sole responsibility for writing a deliverable document for review by the EU commission and

¹ <https://theknowledgeexchangeblog.com/2016/03/29/top-5-crowdsourcing-initiatives-in-government-engaging-better-with-citizens/>

volunteered to assist with a secondary deliverable document that the lead author was struggling with. I additionally proposed and led an exploration of gamification as a mechanism for motivating students with Special Educational Needs and a second study investigating how impact needs to be managed in complex multi-stakeholder projects, both of which resulted in high-quality academic outputs.

July 2011 – October 2011 Yahoo! Research Lab

Research Officer

I spent 3 months over the summer of 2011 working for Yahoo! Research Labs as an intern with Elizabeth Churchill. Working within the Internet Experiences Group, I developed two mobile apps on the android platform which explored ways of making phone-based communication more social. In addition, I assisted in a number of projects across the team.

September 2006 – August 2007 Hewlett Packard Research Labs, Bristol

Research Officer

I was employed on a one-year industrial placement at HP Research Labs, Bristol, as a research officer. My main responsibilities were as a high-level code developer, mainly using C, to develop software for the HP e-reading project. As a research officer I organised my own workload and responsibilities. I took the project in new directions by using 3D graphics on the PC and considering the use of news content to supplement books.

Research Experience

My research interests lie in the field of Human-Computer Interaction with my focus to date being on user-centred design. My core interest and focus has been on the topics of collaboration and Computer Mediated Communication (CMC), primarily through conceptual and design-oriented research on user experience and tangible interaction.

My PhD was based around designing communication devices to support Long Distance Dating Relationships (LDDRs). The thesis is based around three key themes. The first is to define “social presence” as a workable concept in the context of designing communication technologies to support distance relationships. The second theme is the development of seven different technologies, each based on the mimicry of a co-located behaviour through tangible technology. Through these technologies we were able to explore the design properties that we consider to be important in the context of LDDRs. The final theme is investigating the impact the developed devices have on feelings of Social Presence in long distance relationships. Through five case studies we explored how our devices operated within particular relationships and the impact they had.

More recently I have become interested in large-scale communication and community building, particularly around civic engagement and Smart City projects. This is the topic of my current post-doc position where I am exploring two facets of the same question. The first element is around exploring and understanding how bottom-up approaches to generating project ideas differ from researcher or commercial led projects. The second strand is in evaluating and reflecting on the design of the process we have used to facilitate citizen innovation and what the opportunities and challenges are of user-centric design at an urban scale.

I have additional interests beyond CMC, particularly within the field of education. As part of my position at the London Knowledge Lab I worked within a number of Dyslexia-specialist teaching centres, exploring where teacher’s currently feel that they need support. Since students with dyslexia commonly struggle to become motivated, we explored whether a gamification platform could provide one mechanism for improving their motivation. Such a platform has the additional benefit or rewarding progress and achievements that do not currently appear within standardised testing.

Through my postdoctoral positions I have gained experience of working in complex multi-stakeholder projects where each partner has their own perspective on the direction the project should take. Furthermore, I have had to establish my own research agenda within these projects.

Research Skills

- Programming languages: Java, C, MySQL PHP
- Extensive prototype development using phidget control boards
- Android development experience with my published apps having a combined download of around 43,000
- Substantial field work experience within homes, schools and cities
- I have run and assisted with lab-based studies
- Experience of analysing qualitative data using NVivo
- Analysis of quantitative data using SPSS

Funding Awarded

1st May 2014 - 30th April 2017 £135,401

The Leverhulme Trust

I co-authored a bid for funding with Dr Leon Watts. The Leverhulme Trust approved the grant proposal titled “Investing care and appreciating effort in the use of personal communication technology”. The value awarded is £135,401 and the reference is RPG-2013-269. I am on the steering committee of the bid and have been granted a Visiting Research Fellowship at the University of Bath for the duration of the project. I have had a strong contribution to the project, providing a level of oversight and management in terms of ensuring the project is meeting its milestones. Additionally, I have been involved in the analysis work of 2 interview studies and in turning the insights generated into meaningful designs and prototypes.

1st January 2017 – 30th June 2017 £20,070

MK:Smart Extension Budget

I wrote a bid for funding to the MK:Smart Executive Board to use some of the current underspend on additional activities. The bid focused on gaining additional staff time for Community Action: MK to ensure they can continue to collaborating on the Citizen Innovation workpackage in the extension period January-July 2017, particularly assisting with impact activities.

I am currently preparing a bid for submission to the EPSRC focusing on designing with marginalized communities in the context of Smart Cities. I have also been working within the Open University on the research centre on Smart Cities.

Teaching Experience

2016 - The Open University

Consultant on TM356 – Interaction Design and User Experience

I gained experience in the production and presentation of OU distance teaching as a co-opted member of the TM356 module team. My principle duties were to critically read the four blocks and complete the associated Tutor Marked Assessments (TMAs). I recommended a series of changes which were adopted by the module team, both in the formulation of the TMAs but also in the associated Tutor Notes. I have also created a strong link between the MK:Smart research project and the teaching in TM356 through creation of video materials based on citizen projects in a smart city context. I am also assisting with the innovative learning event scheduled as part of the new Group Tuition Policy for TM356, through a series of face-to-face hackathon style prototyping days to be hosted in February 2017 in London, Manchester and Newcastle.

2012 – 2013 University of Bath

Undergraduate and Masters Lecturer

I lectured a module taught to BSc and MSc students called Safety-Critical Systems (CM30072/CM50121). The unit focussed on what safety-critical systems are, common shortcomings and issues with safety concerns is software development and a variety of design methods for safety-critical systems. My responsibilities included the preparation and delivery of the lectures for the year along with the setting and marking of the unit coursework and exam. I also attended the exam board for the year. I taught the module to 43 BSc students and 6 MSc students.

2011 – 2012 University of Bath

Undergraduate Dissertation Supervisor

I supervised a final year undergraduate student on their dissertation. The title was: “An investigation into mobile systems to support intimate communication for couples in long distance relationships through sending personalised media”. The student received a first for his dissertation.

2010 – 2011 University of Bath

Unit Lead

In 2010 I was a unit lead on the MSc level unit, Collaborative Systems. This unit focussed on a variety of current research topics within Computer-Mediated-Communication and using those topics to explore with the students some of the ongoing research questions and controversies within the field. This principally involved selecting relevant material for students to read and then facilitating discussion in class.

2008 – 2011 University of Bath

Teaching Assistant

I tutored the year-long Systems Engineering unit for first year Computer Scientists. I also tutored second year Computer Science students on Interactions, an introductory HCI unit, and on their Integrated Project unit. My main responsibilities

include the representation of lecture materials and guiding students through questions pertinent to the material as well as marking coursework submissions. I was also a point of contact with regards to questions about the coursework.

Academic Service

Reviewer for academic conferences and journals:

- ACM CHI (Human factors in Computing): 2017, 2016, 2014, 2013 and 2012, alt:chi 2016, 2015, 2011 and 2010,
- ACM DIS (Designing Interactive Systems) 2016, 2012 and 2010
- ACM CSCW (Computer-Supported Cooperative Work and Social Computing) 2017 and 2016
- ACM TEI (Tangible Embedded Interaction) TEI 2011
- Eurohaptics 2010
- The International Journal of Human-Computer Studies
- Interacting with Computers journal

Programme Committee member:

- Eurohaptics 2012
- British HCI 2016, 2014 and 2012
- I was an Associate Chair for the ACM CHI (Human factors in Computing) Work in Progress track 2015.

Panel member:

- 2015 ACM conference on Pervasive and Ubiquitous Computing, First International Workshop on Smart Cities

Other activities:

- I was a member of the Editorial Board of the ACM Student Magazine, Crossroads from 2010-2013. Crossroads has a global readership of 35,000.
- Chair of the HCI seminar group at the University of Bath 2009 – 2011

I have been a professional member of the ACM and SIGCHI group since 2008.

Impact and Public Engagement

Through my work on Our MK I have been focussed on maximising impact, particularly as Our MK is considered to be one of the showcases of the MK:Smart project. I have been instrumental in ensuring that the research is widely disseminated both internally and externally, presenting the research at MK Geek Night, the MK Feast Food Festival, the OU parliamentary showcase and soliciting and receiving the support of both MPs for Milton Keynes behind the project. Our MK and its associated projects have appeared in at least 8 local press stories including articles in One MK and the MK Citizen.

I have met with various organizations, allowing us to spread awareness of MK:Smart and Our MK outside of MK. These organizations include the National Museum of Computing, the Universities of Reading, Durham, Newcastle and Bristol, the Royal Academy of Engineering, Samsung, LUANAR Malawi and the National Development and Reform Commission/the China Centre for Urban Development. We are currently taking advice from the Local Government Association, the MPs for Milton Keynes and city councillors as to how to sustain the ideas behind Our MK in the future.

We are currently exploring the potential for a REF Impact Case Study based on the work of the Citizen Innovation in the MK:Smart project.

While working on the iLearnRW project, I exhibited our technology at the world leading IT and Education trade show BETT (British Educational Training and Technology Show), discussing our research and software with a wide variety of teachers and IT professionals.

Awards and Distinctions

I have been nominated for a Special Merit Award at the Open University for my work on the MK:Smart project.

Our MK has been listed as one of the top 5 crowdfunded initiatives in government affairs by Idox. We have also submitted applications to the UK Smart City Awards, the MK Business Achievement Awards and the European Digital Skills Award.

References

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Publications

The complete set of publications is available as open access on the relevant institutional repository.

Journal Publications

1. Annika Wolff, **Daniel Gooch**, Umar Mir, Jose Cavero and Gerd Kortuem. Creating an Understanding of Data Literacy for a Data-driven Society. In Press. Journal of Community Informatics. **(Rank² B)**
2. **Daniel Gooch**, Asimina Vasalou, Laura Benton. 2016. Impact in Interdisciplinary and Cross-Sector Research: Opportunities and Challenges. Published online March 2016. Journal of the American Society for Information Science and Technology (JASIST). DOI:10.1002/asi.23658. **(Rank A*)**
3. **Daniel Gooch**, Asimina Vasalou, Laura Benton, Rilla Khaled and Dominik Lukes. 2016. Creating Bridges: The Role of Exploratory Design Research in an Intelligent Tutoring System Project. Interacting with Computers (IwC), 28(3), pp. 372-386. DOI: 10.1093/iwc/iwv009. **(Rank B)**
4. **Daniel Gooch** and Leon Watts. 2015. The Impact of Social Presence on Feelings of Closeness in Personal Relationships. Interacting with Computers (IwC), 27(6), pp. 661-674. DOI: 10.1093/iwc/iwu020. **(Rank B)**
5. **Daniel Gooch** and Leon Watts. November 2014. Social Presence and the void in distant relationships: How do people use communication technologies to turn absence into fondness of the heart, rather than drifting out of mind? AI & Society, 29(4), pp 507-519. DOI: 10.1007/s00146-013-0492-9. **(Rank C)**

Conference Publications

6. Ryan Kelly, **Daniel Gooch**, Bhagyashree Patil and Leon Watts. 2017. Demanding by Design: Supporting Effortful Communication Practices in Close Personal Relationships. Accepted for publication in the Proceedings of the 20th ACM Conference on Computer Supported Cooperative Work and Social Computing (CSCW 2017), ACM, NY, USA. **(Rank A)**. Honorable Mention.
7. **Daniel Gooch**, Asimina Vasalou, Laura Benton, and Rilla Khaled. 2016. Using Gamification to Motivate Students with Dyslexia. In Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems (CHI '16). ACM, New York, NY, USA, 969-980. DOI: 10.1145/2858036.2858231. **(Rank A*)**
8. John Moore, Gerd Kortuem, Andrew Smith, Niaz Chowdhury, Jose Cavero, and **Daniel Gooch**. 2016. DevOps for the Urban IoT. In Proceedings of the Second International Conference on IoT in Urban Space (Urb-IoT '16). ACM, New York, NY, USA, 78-81. DOI: 10.1145/2962735.2962747
9. **Daniel Gooch**, Asimina Vasalou, Laura Benton. 2015. Exploring the use of a Gamification Platform to Support Students with Dyslexia, 2015. The 6th International Conference on Information, Intelligence, Systems and Applications.
10. Laura Benton, Asimina Vasalou, Rilla Khaled, Hilary Johnson and **Daniel Gooch**. 2014. Diversity for Design: A Framework for Involving Neurodiverse Children in the Technology Design Process. In Proceedings of the 2014 annual conference on Human factors in computing systems (CHI 2014). ACM, New York, NY, USA, pp. 3747-3756. DOI: 10.1145/2556288.2557244. **(Rank A*)**
11. Asimina Vasalou, Rilla Khaled, **Daniel Gooch** and Laura Benton. 2014. Problematizing cultural appropriation. In Proceedings of the first ACM SIGCHI annual symposium on Computer-human interaction in play (CHI PLAY 2014). ACM, New York, NY, USA, pp. 267-276. DOI: 10.1145/2658537.2658689

² All rankings are based on the CORE Computing Research & Education ranking - <http://www.core.edu.au>

12. Laura Benton, Asimina Vasalou and **Daniel Gooch**. 2014. Understanding and Fostering Children's Storytelling During Game Narrative Design. In Proceedings of the 2014 conference on Interaction design and children (IDC '14). ACM, New York, NY, USA, pp. 301-304. DOI: 10.1145/2593968.2610477
13. **Daniel Gooch** and Leon Watts. 2012. YourGloves, hothands and hotmits: devices to hold hands at a distance. In Proceedings of the 25th annual ACM symposium on User interface software and technology (UIST '12). ACM, New York, NY, USA, pp. 157-166. DOI: 10.1145/2380116.2380138. **(Rank A)**
14. Ryan Kelly and **Daniel Gooch**. 2012. Understanding participation and opportunities for design from an online postcard sending community. In Proceedings of the Designing Interactive Systems Conference (DIS '12). ACM, New York, NY, USA, pp. 568-571. DOI: 10.1145/2317956.2318041. **(Rank B)**
15. **Daniel Gooch** and Leon Watts. 2011. Understanding Social Presence. In Proceedings of the International Society for Presence Research Annual Conference (ISPR 2011). pp. 90-94.
16. **Daniel Gooch** and Leon Watts. 2011. Up close and personal: social presence in mediated personal relationships. In Proceedings of the 25th BCS Conference on Human-Computer Interaction (BCS-HCI '11). British Computer Society, Swindon, UK, pp. 227-236.
17. **Daniel Gooch** and Leon Watts. 2011. A design framework for mediated personal relationship devices. In Proceedings of the 25th BCS Conference on Human-Computer Interaction (BCS-HCI '11). British Computer Society, Swindon, UK, pp. 237-242.

Book Chapters

18. Annika Wolff, Alan Valdez Juarez, Matthew Barker, Stephen Potter, **Daniel Gooch**, Emilie Giles, and John Miles. 2017. Engaging with the Smart City Through Urban Data Games. In: Nijholt, Anton ed. Playable Cities: The City as a Digital Playground. Gaming Media and Social Effects (1). Springer, (In press).

Poster, Workshop and Adjunct Publications

19. **Daniel Gooch** and Ryan Kelly. 2016. Season's Greetings: An Analysis of Christmas Card Use. In Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems (CHI EA '16). ACM, New York, NY, USA, 2105-2111. DOI: 10.1145/2851581.2892341
20. **Daniel Gooch** and Gerd Kortuem, 2016. Creating sustainability through Smart City Projects. Design patterns, principles, and strategies for Sustainable HCI workshop at CHI 2016.
21. Annika Wolff, **Daniel Gooch** and Gerd Kortuem, 2016. Data Literacy to Support Human-centred Machine Learning. Workshop on Human-centred machine learning at CHI 2016.
22. Ryan Kelly, **Daniel Gooch** and Leon Watts. 2016. Technology appropriation as discretionary effort in mediated close personal relationships. Workshop on Collaborative Appropriation: How Couples, Teams, Groups and Communities Adapt and Adopt Technologies at CSCW 2016.
23. **Daniel Gooch**, Gerd Kortuem, Annika Wolff, Rebecca Brown. Reimagining the Role of Citizens in Smart City Projects. 2015. Adjunct Proceedings of the 2015 ACM International Joint Conference on Pervasive and Ubiquitous Computing, First International Workshop on Smart Cities: People, Technology and Data. ACM, New York, NY, USA, pp. 1587-1594. DOI: 10.1145/2800835.2801622
24. Ryan Kelly, Leon Watts and **Daniel Gooch**. Is 'Additional' Effort Always Negative? Understanding Discretionary Work in Interpersonal Communications. 2015. In the Proceedings of the 18th ACM Conference Companion on Computer Supported Cooperative Work and Social Computing (CSCW 2015), ACM, NY, USA. pp. 191-194. DOI: 10.1145/2685553.2699004
25. Annika Wolff, **Daniel Gooch**, Umar Mir, Jose Cavero and Gerd Kortuem. 2015. Removing barriers for citizen participation to urban innovation. In: Digital Cities 9, 27 June 2015, Limerick.

26. **Daniel Gooch**. Making Communication Personal Again. *Interfaces Magazine*, Spring 2012.
27. **Daniel Gooch** and Leon Watts. 2012. It's neat to feel the heat: how can we hold hands at a distance?. In *CHI '12 Extended Abstracts on Human Factors in Computing Systems (CHI EA '12)*. ACM, New York, NY, USA, pp. 1535-1540. DOI: 10.1145/2212776.2223668
28. **Daniel Gooch** and Leon Watts. 2012. sleepyWhispers: sharing goodnights within distant relationships. In *Adjunct proceedings of the 25th annual ACM symposium on User interface software and technology (UIST Adjunct Proceedings '12)*. ACM, New York, NY, USA, pp. 61-62. DOI: 10.1145/2380296.2380322
29. **Daniel Gooch**. 2011. Socialising presence. In *Proceedings of the 2011 annual conference extended abstracts on Human factors in computing systems (CHI EA '11)*. ACM, New York, NY, USA, pp. 1049-1052. DOI: 10.1145/1979742.1979685
30. **Daniel Gooch** and Leon Watts. 2011. The Magic Sock Drawer project. In *Proceedings of the 2011 annual conference extended abstracts on Human factors in computing systems (CHI EA '11)*. ACM, New York, NY, USA, pp. 243-252. DOI: 10.1145/1979742.1979613
31. **Daniel Gooch** and Leon Watts. 2011. YourGlove: A Device for Remote Hand Holding. In *Proceedings of the 25th BCS Conference on Human-Computer Interaction (BCS-HCI '11)*. British Computer Society, Swindon, UK, pp. 435-436.
32. **Daniel Gooch** and Leon Watts. 2010. Communicating Social Presence Through Thermal Hugs, in *Proceedings of the SISSI workshop at Ubicomp 2010*

Publication Metrics: Citation Count: 117, h-index: 6 (source: scholar.google.co.uk, 27/10/16).

Publications in Preparation/Under Review

1. Asimina Vasalou, **Daniel Gooch**, Rilla Khaled and Wayne Holmes. Games-based learning for struggling readers: How social interaction fosters learning and motivation during small group game-play. Under review with corrections for the *Computers and Education* journal.
2. **Daniel Gooch**, Matthew Barker, Lorraine Hudson, Rebecca Brown, Hannah Forbes, Anna Klis-Davies, Robbie Macpherson, Clare Walton, Gerd Kortuem, Janet van der Linden and Marian Petre. 2017. Amplifying Quiet Voices: Empowering Citizens as Innovators in Smart City Projects. Under review for CHI 2017.
3. **Daniel Gooch**, Lorraine Hudson, Matthew Barker, Annika Wolff and Marian Petre. 2017. Mining a MOOC to examine international views of the “Smart City”. Under review for CHI 2017.
4. Ryan Kelly, **Daniel Gooch** and Leon Watts. 2017. ReWriting, Message Meters, and Message Miner: Designs for Revealing Effort in Close Personal Communications. Under review for CHI 2017.
5. Annika Wolff, Matthew Barker, **Daniel Gooch**, Lorraine Hudson, Jose Cavero Montaner and Marian Petre. 2017. Picking Smart Apart: A Typology of Data-driven Smart City Technologies to Support Innovation. Under review for CHI 2017.
6. Jose Cavero Montaner, **Daniel Gooch**, Annika Wolff, Michel Wermelinger and Marian Petre. 2017. What colour is my house if I'm losing heat through my roof? 2017. Under review for CHI 2017.
7. Eiman Elbanhawy, **Daniel Gooch**, Blaine Price, Marian Petre and Janet van der Linden. It's Green, Put the Dishwasher On! Under review for *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*.