Andrew Garbett

Software Engineer / Interaction Designer / UX Researcher
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PROFILE

I am an experienced full-stack developer with a keen interest in designing compelling user experiences and developing innovative products for both mobile and web. I lead product design concepts working alongside engineers, designers, and researchers to realise next generation technologies. I use an API microservice architecture approach (Node.js) and Android (Kotlin, Java) for mobile development, and deploy using Docker/AWS. I design wireframe prototypes (Adobe XD) and create concept videos using Adobe Premiere Pro and After Effects. During my PhD I gained experience of workshop facilitation, conducting and analysing interviews, and publishing research findings at leading international Human-Computer Interaction conferences.

Backend: **Node.js, Python, PHP, C#**
Frontend: **Vue.js, D3.js, jQuery, CSS**
Deployment: **Docker, Vagrant**
Frameworks: **Vue.js, Sails.js, CakePHP, CodeIgniter**
Portfolio: http://andygarbett.co.uk

Mobile: **Android (Kotlin / Java), Xamarin (C#)**
Databases: **MySQL, MongoDB, Neo4j GraphDb**
Services: **AWS, Google Firebase, Twilio**
UX: **Adobe XD, Premiere Pro, After Effects**
Git Repos: https://github.com/garbit

EDUCATION

PhD. Computer Science, Open Lab, Newcastle University   Sept 2012 - April 2017
Thesis: Designing Community Driven Participatory Platforms: Reconfiguring Roles, Resources, Infrastructure, and Constraints for Community Commissioning

- ○ Explored the design of tools, platforms, and services to maximize reach and depth of citizen participation in the generation of community-driven information resources.
- ○ Launched App-Movement.com an online platform that enables communities to collaboratively design and automatically generate location-based review mobile apps resulting in ~125,000 users and 24 mobile applications.
- ○ Developed a community commissioning framework that draws upon qualitative and quantitative data analysis of three case studies.

BSc. Software Engineering - 1st Class, University of Lincoln   Sept 2007 - Aug 2010
BTEC National Diploma (Level 3) IT Practitioners - A Level: A, A, A   Sept 2005 - Aug 2007

EMPLOYMENT

Senior Engineer / Interaction Designer   Nov 2019 - Present
Samsung AI Center - Cambridge, Samsung Electronics

- ○ Designing Human-Centric AI for wellbeing technologies that promote a deeper understanding of ourselves using computer vision, ubiquitous sensing, and personal data.
- ○ Work alongside AI researchers at SAIC (vision, sensing, and voice) and design team at Samsung Design Europe to design and develop next generation AI experiences.

Skills: Qualitative interviews, wireframing (Adobe XD), video concepts (Premiere Pro, After Effects)
Tools: Android Kotlin, Node.js, Vue.js, Docker, AWS, Git

Research Associate Jan 2019 - Oct 2019

Distributed Ledgers and Decentralised Energy in sub-Saharan Africa, (EP/P031854/1)

Open Lab, School of Computing Science, Newcastle University

- Lead researcher in the design of peer-to-peer solar energy sharing platform for off-grid solar energy sharing using distributed ledger technologies.
- Co-researcher exploring the use of distributed ledgers and smart contracts for collective purchasing with Syrian Refugees enrolled in the World Food Programme.

Skills: Workshop design and facilitation, qualitative interviews
Tools: Ethereum Solidity, Node.js, Vue.js, Docker, AWS, Git

Research Associate Feb 2017 - Dec 2018

Digital Economy Research Center (EP/M023001/1)

Open Lab, School of Computing Science, Newcastle University

- Lead researcher in collaboration with Newcastle United Foundation designing wearable activity trackers to engage primary school children with personal informatics.
- Developed distributed SMS donation platform for coordination solidarity groups in Greece.
- Created and delivered BBC Micro:bit curriculum to 270 primary school students in Newcastle to teach computational thinking and programming skills.
- Co-designed WhatFutures, a WhatsApp future forecasting game with International Federation of Red Cross and Red Crescent Society, played by 3,200 volunteers from 120 countries.

Skills: Qualitative Interviews, thematic analysis, survey design, wireframing (Adobe XD), quantitative analysis, event planning, educational curriculum development
Tools: Java (Android), Xamarin (C#), Sails.js, Angularjs, Node.js, Vue.js, Docker, AWS, Twilio

Research Associate June 2014 - Feb 2015

Collections Dive Project (Nesta)

Open Lab, School of Computing Science, Newcastle University

- Coordinated collaboration between Microsoft Research Cambridge, Tyne and Wear Archives and Museums and Newcastle University.
- Lead developer of novel discovery interface for exploring vast digitized museum collections.
- Discovery experience awarded North East Museum of Year by Journal Culture Awards 2015.

Skills: Qualitative Interviews, cognitive walkthroughs, video data analysis
Tools: CakePHP, D3.js, jQuery, MongoDB, Neo4j Graph Database, Vagrant, Git

Interaction Designer Jan 2013 - May 2013

BBC Research and Development, Salford

- Worked within User Experience Research group to inform design of social search and reputation system for citizen journalists within BBC.
- Conducted semi-structured interviews with professional journalists to understand existing practices of incorporating citizen journalists into the national news production workflow.

Research Assistant Dec 2010 - Feb 2013

ENACT: Exploiting social Networks to Augment Cognitive behavioural Therapy (EP/I000615/1)

Lincoln Social Computing Research Centre, University of Lincoln

- Designed and deployed large-scale social network to deliver Computerised Cognitive

Behavioural Therapy for patients living with Insomnia.
- ○ Developed clinically validated sleep measurement and automated sleep restriction therapy mobile application for Android platform.

Tools: Java (Android), CodeIgniter, SocialEngine (Zend), jQuery, MySQL

Trainee Developer   June 2010 - Dec 2010
Selenity (previously Software Europe), Lincoln

- ○ Developed web based support ticket system for leading expenses management software company and extended existing skills to incorporate industry standard Agile development.

Tools: C#, ASP.NET, Javascript, MSSQL, Team Foundation Server

Officer Cadet   Sept 2008 - June 2010
East Midlands Officer Training Corps, British Army

- ○ Completed leadership, communication, and critical thinking training as part of the Military Leadership and Development Program (Level 1 & 2) alongside my studies at university.

KEY PROJECTS

ThinkActive - https://thinkactivekit.com
Getting young people thinking active with wearables and the Newcastle United Foundation
In collaboration with Newcastle United Foundation the ThinkActive system promotes positive behaviour change through activity tracking in the classroom. Each child collects data through a wrist worn activity tracker which is then used to enhance the programmes offered by the NUF and provides personal informatics tracking in the classroom. The tablet application and activity trackers provide a simple method of authentication, data collection and presentation, to provide insights into activity levels of Key Stage 2 students in the West End of Newcastle.

Tech: Sails.js, Vue.js, Xamarin, Wearable Activity Trackers (Bluetooth Low Energy), MySQL, RESTful API, Google FCM, Amazon S3, Amazon CloudFront

FoodBlock
Leveraging Distributed Ledger Technologies and Smart Contracts to facilitate collective purchasing with Syrian Refugees in Lebanon
In collaboration with the American University of Beirut the FoodBlock project explores the use of smart contracts for collective purchasing in the context of Syrian refugees in Lebanon who receive aid through the World Food Programme. Our goal is to provide communities with DLT technologies that support bottom-up approaches to food purchasing and facilitates collective tendering and supports a localised sharing economy food delivery service to encourage further informal employment.

App Movement - https://app-movement.com
An online platform to enable communities to commission location-based review mobile apps
App Movement is a platform that enables communities to propose campaigns, collaboratively design their idea, and automatically generate their own location-based review mobile application in response to the community's needs. Launched in 2015 the service now has over 70,000 users who have created over 120 campaigns and automatically generated 21 mobile applications to support

communities in finding: drone flying locations, gender neutral toilets, dementia friendly places, and many more.

Tech: CakePHP, MySQL, Java Android, iOS, RESTful API, Python (automated build tool), Amazon S3

IrisMSG - http://irismsg.io
A community SMS donation mobile app inspired by the Solidarity Economy
IrisMSG.io allows you to create a low-cost distributed communication network to broadcast SMS messages. Messages are sent through a network of donors who contribute their unused SMS credit to solidarity groups in Greece. As a result, the cost of communication by the organisation is significantly reduced, as well as becomes more transparent and decentralised. This approach provides an innovative alternative currency for donating latent resources to the solidarity economy.

Tech: Node.js, Angular, Xamarin, RESTful API, MySQL, Docker, Twilio, Google FCM

Collections Dive - http://www.collectionsdivetwmuseums.org.uk
Immersive discovery interfaces for online museum experiences
Collections Dive was developed in collaboration with Microsoft Research Cambridge and Tyne and Wear Archives and Museums to promote serendipitous journeys through large-scale digital museum collections. The full screen, single page immersive experience engages visitors in exploring the collection through responding intelligently to the interests and behaviour of the visitor. Scroll speed is used to predict visitor interest and thus slow, varying, or fast scroll speed alters the relatedness of artefacts presented.

Tech: CakePHP, D3.js, jQuery, Neo4j, MongoDB

FeedFinder - http://feed-finder.co.uk
Helping mothers find breastfeeding friendly locations nearby
The FeedFinder app enables new mothers to locate suitable breastfeeding locations nearby. Mothers can also rate and review the places they visit and contribute to the worldwide mapping of breastfeeding friendly locations. The app is available on both iOS and Android and has 14,000+ active users. The project has been developed in conjunction with NHS staff and new mothers in the North East of England.

Tech: Vue.js, Node.js, CakePHP, CodeIgniter, MySQL, Java Android, iOS, RESTful API, Amazon S3

HONOURS & AWARDS

- **Equity, Diversity, and Inclusion Award, Communities and Technologies 2019**
  Paper: A Call for Embedding Dignity in Humanitarian Technologies, June 2019

- **Recognition of Contribution to Diversity and Inclusion, DIS2019**
  Paper: Involving Syrian Refugees in Design Research: Lessons from the Field, June 2019

- **T3 Tech Innovation for the Future Award (2nd Place, £3,000): ThinkActive**
  T3 and Tech Radar in association with Honor, Sept 2018

- **Honourable Mention (top 5% of papers), CHI 2017**
  On Speculative Enactments, May 2017

- ○ **Honourable Mention (top 5% of papers), CHI 2017**
  Care and Connect: Exploring Dementia-Friendliness Through an Online Community Commissioning Platform

- ○ **Rosalind Franklin Appathon Finalist: FeedFinder**
  University College London, Feb 2016

- ○ **Honourable Mention (top 5% of papers), CHI 2016**
  Metadating: Exploring the Romance and Future of Personal Data, May 2016

- ○ **Digital Economy Social Impact Award: FeedFinder**
  Engineering and Physical Sciences Research Council, Dec 2015

- ○ **North East Museum of the Year: Collections Dive Discovery Interface**
  The Journal Culture Awards, April 2015

- ○ **Best Undergraduate in School of Computer Science 2010**
  University of Lincoln, Aug 2010

TEACHING EXPERIENCE

CSC3722: Advanced Interaction Design (Lecturing)
3rd Year BSc. Computer Science, Newcastle University

CSC3721: Introduction to Human-Computer Interaction (Lecturing)
3rd Year BSc. Computer Science, Newcastle University

CSC8601: Introduction to Digital Civics (Lecturing)
1st Year MRes. Digital Civics, Newcastle University

CSC2024: Database Technology (Demonstrating)
2nd Year BSc. Computer Science, Newcastle University

Enterprise Week (Lesson Delivery and Learning Exercises)
Primary School Pupil Years 4 - 6 (600 students), Newcastle University

PROFESSIONAL MEMBERSHIPS AND ACADEMIC SERVICE

Association for Computing Machinery (ACM)
Programme Committee: Communities and Technologies '19
Media Chair: TVX2014
Workshop Organiser: British HCI 2015 (HCI and Notions of Democracy, Participation, and Self-Organisation)
Paper Reviewer: CHI'13 - CHI'19, OZCHI'15, DIS'16-18, CSCW'17, Mobile HCI'18

SELECTED PUBLICATIONS

Weaving the Topics of CHI: Using Citation Network Analysis to Explore Emerging Trends
Lee, R., Garbett, A., Wang, J., Hu, B., Jackson, D. 2019. In CHI 2019. 4 - 9 May, Glasgow

WhatFutures: Designing Large-Scale Engagements on WhatsApp
Lambton-Howard, D., Anderson, R., Montague, K., Garbett, A., Hazeldine, S., Alvarez, C., Sweeney, J., Olivier, P., Kharrufa, A. 2019. In CHI 2019. 4 - 9 May, Glasgow

Involving Syrian Refugees in Design Research: Lessons Learnt from the Field
Talhouk, R., Balaam, M., Toombs, A., Garbett, A., Akik, C, Ghattas, H., Araujo-Soares, V., Ahmad, B., Montague, K. In CHI 2019. 4 - 9 May, Glasgow

Blockchain for Refugees: Current Uses, Opportunities and Considerations
Talhouk, R., Montague, K., Garbett, A.. 2018. In CHI 2018, 21 – 26 April, Montréal.

ThinkActive: Designing for Pseudonymous Activity Tracking in the Classroom
Garbett, A., Chatting, D., Kharrufa, A. 2018. In CHI 2018, 21 – 26 April, Montréal.

A Network Epidemic Model for Online Community Commissioning Data
Lee, C., Garbett, A., Wilkinson, DJ., 2018. In Statistics and Computing, Springer.

"Protection on that Erection?": Discourses of Accountability & Compromising Participation in Digital Sexual Health
Wood, M., Garbett, A., Morrissey, K., Hopkins, P., Balaam, M. 2018. In CHI 2018, 21 – 26 April, Montréal.

Care and Connect: exploring dementia-friendliness through an online community commissioning platform
Morrissey, K., Garbett, A., Jenkins, E., Olivier, P., Wright, P., Brittain, K. 2017. In CHI 2017, 6 – 11 May, Denver.

Experiences of Delivering a Public Health Data Service
Simpson, E., Comber, R., Garbett, A., Jenkins, E., Balaam, M. 2017. In CHI 2017, 6 – 11 May, Denver.

On Speculative Enactments
Elsden, C., Chatting, D., Durrant, A., Nissen, B., Garbett, A., Vines, J., Kirk, D. 2017. In CHI 2017, 6 – 11 May, Denver.

App Movement: A platform for community commissioning of mobile applications
Garbett, A., Jenkins, E., Comber, R., Olivier, P. 2015. In CHI 2016, 7 – 12 May, San Jose.

Factors important for women who breastfeed in public: a content analysis of review data from FeedFinder
Simpson, E., Garbett, A., Comber, R., Balaam, M. 2016. In BMJ Open. BMJ Publishing Group.

Metadating: Exploring the Romance and Future of Personal Data
Elsden, C., Nissen, B., Garbett, A., Chatting, D., Kirk, D., Vines, J. 2016. In CHI 2016, 7 – 12 May, San Jose

I don't know what I'm looking for: Better understanding public usage and behaviours with Tyne & Wear Archives & Museums online collections
Coburn, J., Garbett, A., Gosset, P., Harper, R., Wright, P. 2016. In Museums and the Web 2016.

FeedFinder: A Location-Mapping Mobile Application for Breastfeeding Women
Balaam, M., Comber, R., Jenkins, E., Garbett., A. 2015. In CHI 2015, 18 – 23 April, Seoul.

Anti-social media: Communicating risk through Open Data crime maps and locative media

Garbett, A., Wardman, J., Kirman, B., Linehan, C., Lawson, S. 2015. In HCI Korea 2015, Seoul

Finding "Real People": Trust and Diversity in the Interface Between Professional and Citizen Journalists

Garbett, A., Comber, R., Egglestone, P., Olivier, P. 2013. In CHI 2014, 26 April – 1 May, Toronto

Validating a mobile phone application for the everyday, unobtrusive, objective measurement of sleep

Lawson, S., Jamison-Powell, S., Garbett, A., Linehan, C., Kucharczyk, E., Verbaan, S., Rowland, D. 2013. In CHI 2013, 27 April – 2 May 2013, Paris.

I can't get no sleep: discussing #insomnia on twitter

Jamison-Powell, S., Linehan, C., Dayley L., Garbett, A., Lawson, S. 2012. In CHI 2012, 5 – 10 May, Austin

How dangerous is your life? Personalising Government Open Crime Data

Garbett, A., Linehan, C., Kirman, B., Wardman, J., Lawson, S. 2012. In CHI 2012 Personal Informatics in Practice: Improving Quality of Life Through Data Workshop. 5-10 May 2012, Austin.

Using social media to drive public engagement with open data

Garbett, A., Linehan, C., Kirman, B., Wardman, J., Lawson, S., 2010. In Digital Engagement '11. 15-17 November 2011, Newcastle, UK.

REFERENCES

Available upon request