

Dr Dan Richardson

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Full stack software engineer, designer and human-computer interaction researcher, with extensive experience in leading projects, hosting client-facing interactions, and working in cross-disciplinary teams. I have designed, developed and published mobile and full-stack web applications across multiple technologies with several partner organisations, and am well published in technology design research using participatory methods to engage with stakeholders.

EDUCATION**MRes & PhD in Computing Science (Digital Civics)**

Open Lab, Newcastle University; 2015 - 2020

Thesis title: *Local Communities as Infrastructure for Place-Based Mobile Learning*

Computer Science Games Engineering Masters

Newcastle University; 2010 - 2014 (First class honours)

EMPLOYMENT & EXPERIENCE**Research Fellow**

Action Lab, Monash University, Melbourne; 2020 - Present

Led multiple research & development projects with several partner organisations, including VACRO (designing an application to support prison leavers), and Oxfam in Bangladesh, Caritas Nepal, and the Red Cross Red Crescent with the *Paroli* project (see *Projects*). Was one of the lead organisers & chaired the ACM COMPASS'21 conference; designed and ran an engagement programme for offshore students starting university during the pandemic; and was a Delivery Lead in an international volunteer programme for NGOs.

Visiting Researcher & Developer

International Federation of the Red Cross Red Crescent, Geneva; 2018

Worked at the IFRC's Geneva headquarters in the Innovation Team to develop *TalkFutures* (see *Projects*).

Visiting Researcher

International Computer Science Institute, Berkeley; 2017

Worked within a small team to develop a user onboarding experience for a MOOC platform; designed and hosted participant workshops and think-aloud walkthroughs to assess it.

Research Associate

Culture Lab, Newcastle University, Newcastle upon Tyne; 2014 - 2015

Contributed to several research projects, including: *MySkinSelfie* (see *Projects*); *Speeching*, a **C# Xamarin Android** and **ASP.net** platform designed to assist in therapy for people living with Parkinson's; and *VoiceBoard*, a Raspberry Pi and **Python**-based device which provided a peer support platform for people experiencing homelessness.

Gameplay Programmer

Lemon Moose Games, Gateshead; 2014

Used **Javascript** server-side technologies and **C#** in **Unity3D** to develop a variety of video games in a small team towards client specifications.

HIGHLIGHTED PROJECTS

Code repositories, app store links and further details available at danrichardson.me

Paroli *A web platform which supports holding digitally-augmented calls over traditional phone networks*

- Designed & implemented full platform stack, led further development as **project lead**.
- Open source on **Gitlab**. Deployed in multiple countries.
- Designed and led **design workshops** with international stakeholders.
- Produced **financial plans** and **technical support** for external organisations' deployments.
- **Vue.js**, **mobile-friendly** and **multilingual** website for call hosts.
- **Google Firebase** used for **serverless Javascript** REST API, authentication, realtime **NoSQL** database.
- **Node.js** application interacts with **FreeSWITCH** and **Twilio** on an **Amazon EC2** server to create and manipulate phone calls.
- **Git** and **Ansible** used to support project development, deployment & maintenance.

MovieKeeper *A mobile app for scanning, filtering and rating movies in your physical media collection*

- Personal project to learn **React Native**. Published on the **Play Store**. Open source on **GitHub**.
- **Firebase Functions** and **Firestore** serverless architecture.
- Barcode lookup integration manipulates and sanitises eBay **API** search results to cross-reference IMDB.

OurPlace *Allows users to easily produce, share & complete creative place-based mobile learning activities*

- My PhD project. Published on the **App Store** & **Play Store**. Open source on **GitHub**.
- **Xamarin iOS** and **Xamarin Android** applications, supported by a **C#** Portable Class Library, **ASP.Net** website, **Web API 2** service & an **Entity Framework** database. Hosted on **Microsoft Azure**.
- Phone and tablet support: **Android GUI** produced in **XML** using **Visual Studio**, **iOS** created in **XCode**.
- Led **design research workshops, interviews and deployments** with schools, businesses & volunteer organisations to engage with hundreds of stakeholders, including children, officials, professionals and volunteers.

TalkFutures *Supports the Red Cross in holding global consultations with its international volunteer network*

- Co-developed in a small team as a part of the IFRC's Strategy 2030. Prompted conversations from members of 86 different National Societies around the challenges the Federation should prepare for.
- Mobile and web support through **Xamarin Android**, **Xamarin iOS**, and **Vue.js**, with a **Web API** service hosted on **Microsoft Azure**.
- Helped organise and support the publicity campaign and international deployment.

MySkinSelfie *A smartphone app with a privacy focus, designed for easily tracking skin conditions over time*

- Wrote the full stack for a cross-platform **Xamarin Forms** app deployed within the UK's NHS.
- **Web API** service hosted on **Microsoft Azure**, with user photos stored in **encrypted Blob Storage**.
- Held **usability study**. Discussed the project on BBC Radio Newcastle.

TECHNICAL SKILLS

Languages: Javascript, HTML/CSS, C#, TypeScript, Java, Python, C++, SQL

Frameworks & Libraries: Vue.js, Quasar, React Native, React.js, .Net Framework/Core, Web API/ASP.Net, Razor, Jekyll, Xamarin Android/iOS/Forms

Tools: Git, Google Firebase (Functions, RTDB, Firestore, Authentication, Storage), Visual Studio/Code, Linux, Ansible, Microsoft Azure, Amazon EC2, Adobe Suite, \LaTeX

ACADEMIA

Published on 16+ papers at recognised international venues, including 4 which I wrote and presented as first author. Secured \$50,000 AUD of funding to run *Paroli* studies in Bangladesh. Up-to-date details and PDFs of papers and my PhD thesis are available at danrichardson.me.