

# Daniel Thorpe PhD, BEng Hons

I am an engineer with over 12 years software development experience. My expertise in Swift and iOS development is extensive. I started writing Objective-C using Core Data in 2005 on OS X Tiger, and have been developing predominately with Swift and SwiftUI since their announcement. I have build 3 production apps entirely in SwiftUI, most recently using The Composable Architecture (TCA) and modern Swift concurrency.

## Open Source Contributions

In total, to date, my open source frameworks have had over 1 million downloads and are used in ~4,500 apps.

**Swift-Networking** is a SPM library which I started in June 2022 to create a composable, functional networking library using modern Swift concurrency. Although not widely adopted or recognised, it is fully featured yet lightweight and highly adaptable.

**ProcedureKit** is a Swift framework offering rich and powerful classes for using Apple's (NS)Operation classes. The project was actively developed between June 2015-2019. At it's peak, ProcedureKit was used in over 1000 apps, including ASOS, LinkedIn, SkyQ/Go, Check24 and SquareSpace. It's had ~500,000 downloads, and 28 contributors.

## Professional Experience

### Senior iOS Engineer, Global Relay, May 2022

I joined to build a new search feature in the Global Relay messaging app. The app is predominately built by teams in Vancouver, but this new feature was a green-field project developed by a small team in London. I was the 2nd iOS engineer, and helped to hire 2 additional developers. I advocated to adopt SwiftUI with TCA and structured concurrency from the start. SwiftUI enabled us to prototype and iterate on UI features quickly, while TCA unlocked a single-entry state driven architecture with exhaustive unit testing, feature composition, and dependency isolation.

Additionally, I developed a DSL for SPM which allowed us to maintain a "hyper-modular" package of dozens of targets within a single SPM library product. I have been a vocal advocate for best practices such as code linting (SwiftLint), formatting (swift-format), documentation (DocC) and code-generation (swift-gen), achieved by adopting Swift package plugins and pre-commit tools. I have helped refine the team's process introducing, conventional commits with squashed linear git history, snapshot testing, feature specifications using Gherkin, and updating the Jenkins pipeline for faster CI with continuous delivery to TestFlight.

I have actively collaborated with backend teams to refine their JSON REST API schema. Furthermore, I drove the creation of a middleware API layer to align more closely with the front-end product requirements, and even created a demo gRPC prototype. I am ready to collaborate with Product and Design offering insight from Apple's HiG, or ready to prototype a fresh design from Figma as required.

### Senior iOS Engineer, Vodafone Smart Tech, October 2021 - May 2022

I worked on the accompanying iOS app for Bluetooth Low Energy (BLE) GPS tracker.

### Lead iOS Engineer, ustwo, May 2020 - July 2021

I joined The Body Coach team as the project entered the build phase. The app is a digital experience of Joe Wick's 90 day plan. I helped to build out much of the app's features, from account creation, onboarding, training sections, video player, user profile and homepage. I also helped drive the adoption of reusable and configurable SwiftUI components, Combine based services and stores. At its peak the team grew considerably, to 6 iOS developers working in parallel streams, all fully remote. We maintained consistency through the codebase thanks to constant communication, continuous integration, and incremental delivery. This work culminated in a feature packed release in December 2020.

### Lead iOS Engineer, ustwo, February 2019 - May 2020

I joined ustwo to work on Project Pulse, a startup from a top global bank. The project is an app for SMEs melding open banking, accountancy software and machine learning.

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## Professional Experience cont.

### **Senior iOS Engineer, Telegraph Media Group, October 2018 - February 2019**

I joined TMG to deliver the new Digital Edition iOS app. The work has involved a significant amount of teaching to train TMG's current iOS developers in modern Swift and engineering practices.

### **Mobile Tech Lead, New Look, December 2017 - July 2018**

New Look, a high-street fashion company, contracted me to lead an internal team, tasked with taking control of their mobile product from TigerSpike, an agency. I formed a 10 person team and provided the technical direction for iOS, Android platforms. I migrated tools, personnel and ways-of-working from TigerSpike. I collaborated with their backend agency, Salmon, to re-architect the identity, authentication and basket merge functionality to enable incremental releases of features to reduce operational risk. In February, New Look were able to end the agency engagement; in March, we released the major version of their app which the organisation had started 9 months previously. I established a methodology within the New Look team of incremental improvements and delivery.

### **Senior iOS Engineer, ustwo, June 2017 - November 2017**

I joined usTwo as part of a 4 person iOS team within a larger 12 person mobile team. The product was a connected car app for Jaguar Land Rover, a major British automotive firm. The iOS app had a clean protocol orientated architecture using modern MVC patterns, reactive programming and socket based networking. In particular I worked on features such as remote engine start for climate control, door unlock and stolen vehicle support. Additionally I did significant work evolving the BDD test architecture to eschew 3rd party frameworks in favor of Apple's XCTest.

### **Lead iOS Engineer, Sky UK, January 2016 - November 2016**

I began contracting at Sky as the lead of a 10 person iOS team building the iPhone version of their new flagship product: Sky Q. In April 2016, I began to provide broader technical leadership and direction within the connected devices division. Largely this has been through increased communication with managers and other team's senior developers. This effort has created a structured process for design, development and testing of features. Additionally, I have advocated for, and helped deliver improved CI tooling and process automation. The project supported almost 40 iOS developers at its peak to deliver two distinct product propositions (SkyQ and SkyGo) in multiple markets from the same codebase.

### **Independent Contractor, Open Source contributor, May 2015 - December 2015**

After building an app in Swift, I wanted to share some of my techniques with other developers. During this period I created open source projects.

### **Software Engineer, Yakatak, June 2014 - May 2015**

I joined Yakatak, a 10 person sports-data startup, to build their social messaging app revolving around live sports data, news and sticker messaging. I designed and built the app from scratch in Swift 1.0. The networking layer uses web-sockets with Thrift protocols with promise-based higher level APIs. Beyond UIKit, the app also featured a rich in-app sticker store utilising StoreKit and UIKitDynamics.

### **iOS Lead, Badoo, January 2013 - June 2014**

After three months at Badoo, I was promoted to iOS Lead and responsible for all iOS products. In this role I made significant enhancements in key areas, such as, automation and continuous integration. I introduced real-time app performance metrics and displays, giving the team direct feedback on their work. Most importantly, I fostered a diverse team culture of technical excellence and best practices. This organically led to an ethos of test-driven development, architectural review, pair-wise programming and open-source contributions. In turn this allowed us to engineer a platform infrastructure on top of which new applications (Hot or Not & Bumble) have since been created.

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## Professional Experience cont.

**iOS Developer, Badoo, October 2012 - December 2012**

**Technical Founder, 300 Notes, June 2012 - October 2012**

**Mobile Platform Developer, BraveNewTalent, October 2011 - May 2012**

**Founder, Blinding Skies Limited, August 2009 - August 2011**

**R&D Engineer, Artistic Licence, full-time January 2010 - August 2010, + sporadic client work**

**School of ECS, University of Southampton, October-March 2005/06/07**

**IAM Group, School of ECS, University of Southampton, Summer 2004/05**

## Education

### **University of Southampton, Doctor of Philosophy, 2009**

My PhD, titled *On Shape Mediated Analysis of Spatiotemporal Phenomena*, focused on predicting the future activity of any space-time varying phenomenon that occurs naturally, such as forest fires or the nation-wide incidence of influenza. This was achieved using computer vision, image processing, pattern recognition and statistical models.

### **University of Southampton, 2005**

BEng Electronic Engineering 1st Class Hons

### **Trinity School, 1992 - 2001**

A Levels in Electronics (A), Maths (B) and Physics (B).

10 GCSEs including Maths (A), Physics (B), Chemistry (B), Biology (B), English Language (A\*) and Literature (A\*)