

Nathan Lanza

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Education

Hack Reactor iOS Bootcamp, San Francisco, Ca — January - March 2015

- Full-time, eight week intensive iOS development course.
- Covered both Swift and Objective-C. Included protocol-oriented programming, generics, optionals, functional programming and more.
- Frameworks studied included UIKit, Foundation, CoreData, CloudKit, Firebase, Azure, NSOperation, GCD, MapKit, CoreLocation, CoreMotion, and others.
- Was top student throughout the entire course as evaluated by peers and instructors.

Florida Atlantic University, Boca Raton, FL — Masters of Science in Physics, 2015 — 3.9 GPA

- PhD candidate. Was early in research on the topic of the path integral formulation of quantum gravity (called spin foam theory) and the coupling of fermions to quantum gravity in the field of loop quantum gravity.

iOS Programming

Swift Projects

Workout Log - <https://github.com/nathanlanza/workoutlog>

- iOS app written in Swift. Responsible for entire project. Will be published to App Store upon release of iOS 10 as the entire program is written in Swift 3.0 with the iOS 10 SDK.
- Uses Core Data for storage. Many custom protocols, delegates and helper classes were written to facilitate better code organization around the schema.
- Entire app is storyboard-less: all View Controllers and navigation are instantiated via code. This enables you to utilize generic View Controllers to further generalize your VCs around your data.
- Makes extensive use of generics, protocols, protocols with associated types, protocol extensions, do/try and many other Swift features.
- Utilizes GCD, custom keyboard, programmatic constraints and UI.

Blend Chat - <https://github.com/xdjlao/CoChat>

- iOS app written in Swift. Responsible for backend.
- Wrote the backend with Firebase, Azure and CloudKit as a test of their capabilities before the project manager ultimately decided to stay with Firebase.
- Included AFNetworking, FacebookSDK and Google FirebaseUI.
- Coded much of the app's structure and laid out the MVC hierarchy for the other more UI centric developers.
- Was responsible for cleaning, organizing and maintaining the code written by the other developers.
- Was in charge of the git repository and handled all merges and conflicts.

nBack - <https://github.com/nathanlanza/nback>

- iOS app written in Swift. Responsible for entire app.
- Used CoreData including all standard features as well as custom data migrations between databases.
- Currently working on implementing CloudKit.

Pascal Compiler - <https://github.com/nathanlanza/Pascal-Compiler>

- Command line tool. Original source is in Java.
- Currently translating to Swift for the educational experience.
- Side hobby simply for the experience of learning how a compiler/interpreter works.

Languages

- Swift, Python and Objective-C

Physics & Mathematics

Skills

- General relativity, quantum field theory, quantum mechanics, classical mechanics, etc.
- Differential geometry and topology, Lie groups and algebras, functional analysis, etc.
- Experience teaching and explaining acquired from years of as a college instructor.

Experience

Graduate Teaching Assistant, Florida Atlantic University and Florida State University — 2013 - 2015

- Instructed freshman level laboratory sessions covering classical mechanics, electricity and magnetism and basic electronics.