

Andrew M^cKnight

Résumé

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Education

2013 **M.Sc., Dept. of Computer Science**, Old Dominion University.

- Thesis track in bioinformatics, robotics, image processing and meshing research topics
- Three published papers with two conference presentations
- C++ programming TA for three semesters
- Minor in actuarial mathematics
- Co-led winning seminar group developing traffic analysis iOS app

iOS Experience

4 months **121nexus**, *Medical barcode scanning SaaS*, Boston, MA (remote).

- Stack: Swift, AVFoundation, OpenCV, Firebase, cocoapods-keys, AWS, JIRA, BitBucket
- Highlights:
 - Replaced application UI and networking with their new SDK
 - Reimplemented major area of app with new UI and platform API
 - Added crash reporting (Crashlytics) and logging (XCGLogging)
 - Augmented and documented analytics (Firebase)
 - Assisted launches via iTunes ([121 Scan](#)) and another internal enterprise app

5 years **Insight Therapeutics**, *Medical literature and tools*, Norfolk, VA (remote).

- Stack: ObjC/Swift, MessageUI, Storyboards, CoreGraphics, CoreData, FMDB, SQLite, SSZipArchive, RNCryptor, cocoapods-keys, Trello, BitBucket
- Deliverables:
 - [ClotRx](#) & [DementiaRx](#): reference e-pamphlets
 - Hybrid app with WKWebView
 - Searchable, bookmarkable HTML content extracted from PDFs
 - Interactive clinical surveys, print/email report generation
 - [Antibiotic Kinetics](#): antibiotic dosage calculator
 - Ported from another developer's preexisting Android app
 - Current project under NDA
- Multiple releases and design iterations of all apps

8 months **Layer**, *Cross-platform messaging SaaS*, San Francisco, CA (remote).

- Stack: C/ObjC/Swift, CocoaPods, OCMock, Specta/Expecta, Jenkins, Rails, Thrift, WebSockets/SPDY, SQLite
- Deliverables: ObjC SDKs for data and UI components, an embeddable app layer and fully-functional sample app
- Highlights:
 - Rearchitected test suite to separate unit tests from integration/end-to-end tests
 - Helped streamline developer environment configuration (Rake, Gems, CocoaPods and git submodules)
 - Migrated old SPDY/Thrift architecture to WebSockets with rewritten Thrift specs
 - Implemented new auth and transport layer using [TransitionKit](#)

- 1.8 years **Twitter Crashlytics**, *Crash reporting SaaS*, Cambridge, MA.
- Stack: C/ObjC/Swift, Java/Scala/Clojure, Rails, React/Coffeescript, Storm/Heron, Cascading/Scalding, Graphite, Vertica/Zeppelin, Beanstalk/Kafka, Redis/Cassandra, AWS, TeamCity, Chef, Trello, Protobuf
 - Deliverables: Crashlytics/Fabric SDKs, Mac app and command line tools, front- and back-end maintenance, Unity iOS support
 - Highlights:
 - Streamlined build and release processes with TeamCity agents deployed via Chef
 - Added Bitcode and tvOS compatibility to SDKs
 - Standardized config of all Xcode projects and released the open source [FABConfig](#)
 - Maintenance of backend lambda architecture with on-call rotations
 - Pioneered new backend feature to cross-reference common crashes across apps and present developers with suggested fixes
- 3 months **MC10**, *Medical wearables*, Cambridge, MA.
- Stack: ObjC/Swift, CoreBluetooth, Android, JIRA
 - Deliverables: Companion iOS app for wearable peripheral with BTLE link
 - Highlights:
 - Moved all app/demo code into Git repos, no previous SCM
 - Architected SDK and app codebases from the ground up
 - Built out greenfield app, in beta testing on my exit
 - Set up continuous integration and deployment with TeamCity and Fabric
 - Assisted adoption of Agile processes
- 1.5 years **Raizlabs**, *Mobile consulting boutique*, Boston, MA.
- Stack: ObjC/Swift, Jenkins, TeamCity, Trello, Basecamp
 - Deliverables:
 - [Care.com](#): service seeker/provider matching (4 months)
 - iOS 7 redesign, with perspective zoom effect for a horizontally paged scroll view
 - Dynamic UI generation from server-supplied data
 - [B&H Photo](#): e-commerce (5 months)
 - Custom parallax scrolling of table view headers
 - Push notifications with deep linking
 - UniFirst: interactive enterprise sales catalog on iPad (8 months)
 - Drag and drop editing of clothing selections, with PDF report generation
 - [Invaluable](#): realtime high-end auction platform on iPad (1 month)
 - Paging of API result display in table/collection views
- 6 Months **ODU Systems Lab**, *R&D projects*, Norfolk, VA.
- ChirpXM: location based social networking app (defunct)
 - Supervised two foreign exchange students
 - Prototyped EMR iPad app for CHKD
- 1 year **Old Dominion University**, *Undergraduate capstone project*, Norfolk, VA, (Seminar Project Lead).
- Stack: ObjC, OpenEars and MapQuest SDKs
 - Highlights:
 - 7 member team; 4 presentations given to visiting professors and industry executives
 - Sole developer of native iOS application
 - Highest scoring project!

Other Experience

- 5 months **Intergraph**, *.NET CAD Application*, Hampton, VA, (Intern).
- Stack: C, VisualBasic, SQL, QF-Test, Coverity, Visual Studio, TeamFoundation
 - Image processing, robotics and machine learning applications in bioinformatics
 - Multiple publications and conference presentations
- 2 years **Old Dominion University**, Norfolk, VA, (Research Assistant).
- Java and C++ algorithm development utilizing CGAL, Boost and Jama
 - Image processing, robotics and machine learning applications in bioinformatics
 - Multiple publications and conference presentations
- 2 years **Old Dominion University**, Norfolk, VA, (Lab Instructor).
- Online delivery of CS 333: Problem solving and programming in C++
 - Lab instructor for CS 250: Intermediate programming in C++
 - Assistant instructor for CS 150: Introduction to programming in C++
 - Website maintenance, grading, general student guidance

Personal Projects

- Apps **Trngmtry**, <https://itunes.apple.com/us/app/trngmtry/id1146667288>.
- Draws a set of chosen trigonometric measures on a unit circle, around which a user drags their finger
 - Stack: Swift, CoreGraphics, Pippin, CocoaPods
- Delaunay Triangulator**, <https://itunes.apple.com/us/app/delaunay-triangulator/id657596160>.
- Interactively updating Delaunay triangulation of points from touch input on the screen
 - Stack: C/ObjC/Swift, CoreGraphics, CocoaPods
- Devtools **Pippin**, <https://github.com/TwoRingSoft/Pippin>.
- iOS app plug-and-play infrastructure and helpful extensions
- Vrsnr**, <https://github.com/TwoRingSoft/Vrsnr>.
- Extensible Swift CLI automating version management for devtool makers
- Science **Colloquial Swift**, <https://github.com/armcknight/colloquial-swift>.
- An experiment that surveys Swift repositories and analyzes how the language and stdlib are extended
- MaVec**, <https://github.com/armcknight/MaVec>.
- Classes for matrices and vectors, wrapping Accelerate's functions and adding from-scratch routines

Honors & Awards

- 2013 **Gene Newman Award**, *Best overall paper*, Virginia Modeling, Analysis and Simulation Center Capstone conference.
- 2012 **Graduate with Distinction**, *Awarded with B.Sc.*, Old Dominion University.
- 2012 **Undergraduate Research Award**, *Outstanding undergraduate achievement*, ODU Spring Undergraduate Research Fair.
- 2011 **First Place**, ODU-ACM Programming Contest.
- 2010-2011 **Dean's List**, Old Dominion University.
- 2009 **Summa Cum Laude**, Piedmont Virginia Community College.