Mike Rose
Senior Software Engineer

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Cover Letter

I pride myself as a natural problem solver. I've been described as "he just gets it". My strongest abilities are a strong intuition and a strong style sense. I also naturally curious and a very quick learner— which I feel is very important to keep up with the latest and greatest technology available.

My background is design oriented, but I would also throw my hat in as one of the best iOS developers in Chicago. I began iOS development in mid-2009 with iOS 3. Since then I have touched on just about every framework iOS has to offer. With each new iOS release I study every new feature, API changes, and watch all available videos Apple has to offer on new best practices. I've also have a strong interest in algorithms pertaining to processor and memory performance.

I enjoy working on new projects and startups when there are a lot of different roles to take on and still a lot to figure out. I'm confident in my abilities to take any task, run with it, and complete it with great results.

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Work Experience

Northwestern University
Medical Social Sciences, Feinberg School of Medicine
September 2013 – September 2015

Contracted by Northwestern University to develop the National Institute of Health's Toolbox. NIH Toolbox is a multidimensional set of brief measures assessing cognitive, emotional, motor and sensory function from ages 3 to 85, meeting the need for a standard set of measures that can be used as a "common currency" across diverse study designs and settings.

I was the first iOS developer on the project. Responsible for creating the architecture and data models to support this large project for many years. I also served as the resident iOS expert that help transition Northwestern's development team to iOS. I developed engines and view controllers (front to back) for many scientific instruments (tests) established by the National Institute of Health.

Each engine is a set of algorithms for selecting the next item to present to the participant. Some tests use very linear (sequence) engines. Some with the addition of gates or branching to stop the instrument if a given threshold wasn't reached by a given item or section. Other tests were very non-linear (dichotomous) engines. All engines were populated with parsed items and parameters from two separate XML files. This allowed us to load totally different items and/or customized configurations based on the properties of the participant about to take the instrument.

Instruments Completed

– Dimensional Change Card Sort Test
– Picture Sequence Memory Test
– Picture Vocabulary Test
– List Sorting Working Memory Test

– Flanker Inhibitory Control and Attention Test
– Dynamic Visual Acuity Test
– Visual Acuity Test

Additional Work Completed

– Designed and implemented overall architecture and data model
– Designed and implemented admin shell, which was responsible for:
    – Creation of participants and assessments (groups of instruments) manually or download list
    – Persistence of all participant and assessment data (Core Data)
    – Secure uploading of personal data for data aggregation
– Extensive use of modern UIKit classes (eg. UICollectionView, Auto Layout, Custom Transitions)
– Designed and implemented instrument and assessment creation via custom plist files
    – Allowed for distribution of custom apps to different universities containing different instruments
– Designed and implemented the core parsing library
– Implemented automated testing for instruments to aid in QA
– Experience working in a team environment and advanced version controlling with Git
– Designed and created all UI assets that were missing or needed @2x updating

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Code Samples

MSSSequenceEngine.m
Basic engine for linear playback. Often used for instructions.
https://gist.github.com/rosem/084154f9e1718c84a899

MSSGatedSequenceEngine.m
Extended engine for linear playback with gates. Often used for practices.
https://gist.github.com/rosem/605ca7c4526e60086d0c

GatePracticeParameter3-7.xml
Example XML file showing how the gate sequence engine could be configured via an external parameter file
https://gist.github.com/rosem/bb525b2cc2e34bd9d097

StaticVisionEngine.m
Dichotomous engine. Controls the logic to administer a scientifically valid vision test in under a minute.
https://gist.github.com/rosem/6a3b48759761a9fd144c

StaticVisionViewController.m
Instrument view controller. Handles logic to control views (UI) and record the user's response (via bluetooth keyboard). Next item is then requested from the engine.
https://gist.github.com/rosem/6d6fa6a8699322e156da

SequenceBranchEngineByGate.m
Engine uses parsed parameter XML and the user's response to decide which item is next. This engine using branching (eg. A->C or B->F) instead of gates and thresholds.
https://gist.github.com/rosem/484dbb2a4d8688f6b13c

ListSortingViewController.m
Instrument view controller. Handles logic to control views (UI) and record the user's response (via bluetooth keyboard). Next item is then requested from the engine.
https://gist.github.com/rosem/f59914ff6425fa1108da

Technology Used

– Objective C
– UIKit
– Core Data
– Core Text
– Core Audio
– Core Motion
– Core Bluetooth
– Core Networking
– Multipeer Connectivity
– AVFoundation
– Core Image

– Image IO
– Open GL ES
– Grand Central Dispatch
– Blocks
– Categories
– Delegates
– Protocols

– Algorithms
– Data Structures

– Xcode
– Photoshop
– Illustrator
– InDesign

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Spott
January 2013 – January 2015

Spott is a real-time messenger app that uses location as a connection point. Users can create a "spott" (a group chat) anywhere on a map for other users to find. Technical and UI/UX requirements were similar to basic Facebook functionality. Spott features a news feed with individual posts (like, comment, share), profile pages, and more. Spott is currently at version 1.2.5 (10 updates total), with a 5/5 star rating (61 total reviews) and 10,000 registered users. At its peak Spott had over unique 1,500 visitors a day — most located in the Chicago-land area.

Funded through my company Rosem Inc., as the owner/founder I was responsible for the entire product — design, development, QA, marketing and branding. Additionally I hired and managed a small team consisting of one backend developer and multiple content writers.

Development was paused in January 2015 to focus 100% on the Northwestern University project (above). I plan to continue with development as time allows.

Available in the App Store: *https://itunes.apple.com/us/app/spott/id591300005*

Work Completed

– Designed and implemented backend architecture and data models
– Designed and implemented frontend wireframes, UX and all UI elements (icons, buttons, etc...)
– Designed robust admin panel to monitor content, users, growth and advanced analytics
– Rapid prototyping based on real world app analytics.
– Extensive use of modern UIKit classes (eg. UICollectionView, Auto Layout, Custom Transitions)
– Experience writing client/server interactions with modern techniques (NSURLSession, NSOperationQueues)
– Experience with managing product development with a small focused team
– Experience with team development, version control with Git
– Experience with development / QA cycles
– Experience with releasing production apps and updates via the App Store and iTunes Connect
– Designed branding and all marketing material

Technology Used

– Objective C
– UIKit
– Core Text
– Core Location
– Core Animation
– Core Networking
– MapKit
– Notifications (APNS)
– iBeacons

– RESTful Web Service
– Push API (WebSockets)
– Facebook API
– Flurry API
– Google Analytics API
– Google Places API
– TestFlight

– HTML/CSS
– Ruby
– Ruby on Rails

– Xcode
– Photoshop
– Illustrator
– OmniGraffle

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Rosem Inc.
August 2008 – Present

President and founder. Technology consultant to over 50 clients across many industries ranging from startups to Fortune 500 companies. Responsible for finding new clients and maintaining all existing relationships. My main focus as a technology consultant is continuously researching the latest and greatest tools available to help clients make important business decisions that will benefit them long-term. Since 2009 I have estimated over 200 projects successfully completed.

Early projects were mainly websites, content management systems and Flash/Flex microsites and games. With the release of the iOS 3 (mid-2009) I started the transition to mobile applications with a strong focus on iOS, Ruby, Ruby on Rails and mobile UI/UX design.

I manage multiple concurrent projects (5–6 on average). I project manage a team of three developers and developed my own project management software to keep my business running smoothly. My role on each project varies from designer, developer and project manager — with a lot of overlap in each area. Project usually fall into two main categories. 1) Full product/solution architecture, design and development (80%) or 2) development of a client's design with technical assistance during the design process (20%).

Recommendations can be viewed via my LinkedIn profile (*https://www.linkedin.com/in/rosemcom*).

Project Samples

ETA Chicago
Mobile web application. A Rosem Inc. project, ETA uses your current location to find relevant CTA stops and their associated arrival times.
http://etachicago.com

Pritzker iPad Wall
Developed two iOS applications to showcase The Pritzker Group's portfolio of investments. One for an iPad wall to be displayed in their lobby and one for a handheld (mobile) version. The iPad Wall features face detection to manage it's state and a custom networking framework to connect and sync all 20 iPads featured on the wall.
https://vimeo.com/46403590   *https://vimeo.com/40538245*   *https://vimeo.com/40326668*

Dykema App
iOS application. Dykema's iPhone app serves as a company wide rolodex that makes it easy to contact any lawyer within the law firm.
https://itunes.apple.com/us/app/dykema/id683316990

Brattle Website & CMS Development
Contracted by an agency to develop their website design and highly customized CMS for a large law headquartered in Cambridge, MA.
http://brattle.com

More project sample available upon request.

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Technology Used

- Objective C
- C++ (Open GL)
- HTML/CSS
- Javascript
- Ruby
- Ruby on Rails
- MySQL
- Arduino
- Actionscript 3 (Java)

- RESTful Web Service
- Push API (WebSockets)
- Facebook API
- Twitter API
- LinkedIn API
- YouTube API
- Google Maps API and SDK
- Google Analytics API
- Google Places API

- Xcode
- Photoshop
- Illustrator
- AfterEffects
- Premiere Pro
- Soundbooth
- InDesign
- Flash
- Flex
- OmniGraffle
- OmniFocus

SamataMason (currently Smbolic)
October 2008 – August 2009
Designer and developer for an assortment of projects, ranging from data visualization, interactive design, annual reports (print and web), rich internet applications, video shooting/editing, and photography.

Oneupweb
Marketing Department
July 2007 – April 2008
Designer and developer for an assortment of projects, ranging from marketing collateral, advertisements (print and web), and interface design.

Ferris State University
Design Project Center
September 2006 – May 2007
Brand development for Fifth Third River Bank Run and technical advisor for Ferris State University's e-card promotion.

Ferris State University
Timme Center for Student Services
May 2006 – December 2006
Usability testing, interface design, and concept development.

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Education

Bachelors of Science Degree, Graphic Design
Ferris State University – 2007
Big Rapids, MI 49307

Associate in Applied Science Degree, Web Media
Ferris State University – 2004
Big Rapids, MI 49307

Career Center Certificate, Graphic Arts
Sault Area High School & Career Center – 2002
Sault Ste. Marie, MI 49783
Press Operation & Production, Pre-Press, Design & Development
720 Hours Completed

Career Center Certificate, Business Services & Technology
Sault Area High School & Career Center – 2002
Sault Ste. Marie, MI 49783
HTML, JavasScript, Microsoft Office, Photoshop, Illustrator, PageMaker
720 Hours Completed