John Hearn

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Profile

Experienced software engineer, occasional product manager, and mathematician (with brief stints in fashion design and commercial fishing). Ever a generalist. Currently leveraging varied expertise to direct interdisciplinary teams building software tools for acoustic engineers. I like working with smart people to solve hard problems. I also like race cars.

Recent Work Experience

Principal Software Engineer, Acoustic Tools — Apple

2022-Present | Cupertino, CA

Senior Software Engineer, Acoustic Tools — Apple

2018-2022 | Cupertino, CA

- Technical Lead and Hiring Manager for the Acoustic Tools Team
- Developed core values and methodologies to deliver high-impact software tools on an aggressive schedule
- Responsible for scoping roles, writing job descriptions, recruiting, hiring, and onboarding team members
- Oversaw intake of all tool requests: gathering of requirements, impact assessment and prioritization, customer contract, developer assignment, and delivery
- Provided technical direction for over 40 internal software tools. Some examples include:
  - Web-hosted databases for search and visualization of acoustic simulations (Flask, React, PostgreSQL)
  - Test automation and acoustic data collection for MacOS and iOS devices (Obj-C, Python, MatLab)
  - Telephony field testing (Swift)
  - FAI/Cpk visualization and analysis (Swift, Python/Pandas)
  - Reliability data filtration and visualization (Swift, Python)
  - MUSHRA-like acoustic user response surveys (NodeJS, Angular)
- Product manager for *Auditor* and *Labrador* (developed externally by a team of 20 with the project manager reporting to me)
  - *Labrador* is a warehouse for acoustic factory data. Module and System DRIs create curated data feeds based on product, build, location, vendor, station IDs, and dates. Serial numbers are decoded to associate configs with build matrix information for further analysis.
  - *Auditor* is a visualization, analysis, and reporting tool for factory data. Yield tables, frequency response, distortion, box, and histogram plots are created from Labrador data sets. DRIs from Module, System Integration, or N&V teams can automate repetitive forms of statistical analysis for dash-boarding, or investigate failures based on vendor, config, or build matrix parameters.
  - Oversaw migration from a failing monolithic architecture (Java, Spring, JSP) to React SPA front-end and distributed, redundant, scalable microservices backend (Java, Spring, Kubernetes).
  - Developed OKRs to drive vendor adoption of TDD, Kanban, CI/CD, and technical debt heat maps
  - Achieved minimum of 20x speed improvement for 12 worst performance bottlenecks
  - Unit and Integration test coverage increased from 17% to 83%
  - 80% reduction of bugs found in production

Skills

Professional

- Strong attention to detail
- High ethical standards
- User experience focused
- Promotes collaboration and inclusion
- Communicates technical concepts with simple language
- Recognizes and prevents problems early
- Creative and resourceful in chaotic environments
- Plays the long game

Languages

Proficient: Swift
A Bit Rusty: Objective-C, Java, JavaScript, C/C++, PERL, BASH, MySQL, MongoDB, Ruby, LaTeX
Familiar: Python, FORTRAN, x86 Assembly, MatLab, eLISP, PROLOG

Tools & Frameworks

Xcode, ReactiveSwift, ReactiveCocoa, RxSwift, ReSwift, Moya, ObjectMapper, AlamoFire, Nimble/Quick, XCTest, UIKit, CoreData, CloudKit, SpriteKit, MapKit, CoreLocation, Git, BuddyBuild, ParseServer, Carthage, Cocoapods, Node, React, Redux, Express, AWS, Heroku, GoogleAnalytics, Fabric, Flurry, LLDB, WebPack, Browserfy, Chai, Gulp, JQuery, Subversion, TravisCI, Rails, Selenium, Bugzilla, SocketIO

Education

Harvey Mudd College

BS in Mathematics
Spring 2007 | Claremont, CA

University of Waterloo

Summer 2005 | Waterloo, ON
Courses taken in support of thesis research

Big Nerd Ranch

Spring 2013 | Banning Mills, GA
iOS Essentials with Objective-C

Code Fellows

Spring 2015 | Portland, OR
Advanced Full-Stack Development with JavaScript
Winter 2016 | Seattle, WA
Advanced iOS Development in Swift & Objective-C

iOS Engineer TOMORROW IDEAS
2017-2018 | SEATTLE, WA
(Acquired by Ethos)
- Developed, from infancy to maturity, award-winning financial planning app.
- Conceptualized with VP of Product the design of custom UI to collect and present detailed financial information in a way that was easy for users to understand.
- Onboarded and trained new engineers in use of ReSwift and ReactiveSwift to manage app state and asynchronous data flow.
- Performed daily code reviews to improve team coding standards and app performance.
- Researched and implemented numerous libraries and frameworks for use in app to quickly reach minimum viable product.
- Developed a traffic control algorithm to delay UI updates until complete, interdependent data sets had been returned by the API.
- Developed and maintained client-side business logic to determine when users had completed legally necessary tasks to generate legal documents, and to guide them through unfinished tasks.
- Coded test suite to validate data models and business logic with Quick and Nimble.
- Wrote and maintained internal documentation for build pipeline tools, including Carthage, Cocoapods, ReSwift, custom build scripts, BuddyBuild (for continuous integration testing and test build deployment), and iTunesConnect.
- Migrated project dependency management from Cocoapods to Carthage to improve Swift build times.

OTHER PROJECTS & EXPERIENCE

iPhone App WIKABLE
2017 | SEATTLE, WA
- Developed a hackathon proof of concept Wikipedia client in Objective-C using VoiceOver and DynamicText to make content accessible to people with visual impairment.

iPhone App ROUTESTATS 1
2016 | SEATTLE, WA
- Developed a small app over 4 days to display realtime and aggregate travel statistics using Swift and native APIs.

Backend Web Development JOHN HEARN CONSULTING
2007 - 2016 | PORTLAND, OR AND SEATTLE, WA
- Worked with many clients to develop, test, and maintain backend APIs using Rails, MEAN, or LAMP stacks.

Kickstarter Campaign þapparel
2013 - 2014 | PORTLAND, OR
- Developed a Portland-centric clothing brand sourcing locally made materials and designs.

Engine Development GARAGEGAMES
2007 | EUGENE, OR
- Implemented clip map rendering, bug fixes for MacOS game engine, and legacy code test suite.

Bugzilla/CVS Integration PARASOFT
2006 | MONROVIA, CA
- Implemented automated scripts and Bugzilla-integrated webform to associate CVS revisions of fixes with corresponding Bugzilla tickets.

AWARDS

Plug and Play Summit
WINTER 2017 | WINNER

Chase Bank
2017 | APP OF THE YEAR

Tech Crunch Disrupt
2017 | FINALIST

COURSEWORK

Kolmogorov Complexity
Theory of Complexity
Graph Theory
Analytic Number Theory
Theory of Computation
Algorithms
Data Structures
Combinatorics
Number Theory
Real Analysis I & II
Abstract Algebra I & II
Vector Calculus
Discrete Mathematics
Systems Engineering
Engineering Design & Manufacturing
Linear & Rotational Mechanics
Special Relativity & Intro to Quantum Physics
Electricity & Magnetism

RESEARCH

Kolmogorov Complexity
HARVEY MUDD COLLEGE
2005 - 2006 | CLAREMONT, CA
Worked with Prof. Ran Libeskind-Hadas to explore applications of Kolmogorov complexity to graph compression.

Harvey Mudd Humanities
RESEARCH ASSISTANT
2005 | CLAREMONT, CA
Assisted Prof. Richard Olson in researching sources relating to discovery and use of algebra in China during the ancient and early imperial epochs.