

Todd D. Hodes

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Education

Ph.D. in Computer Science (Systems/Networking), 2002
M.S. in Computer Science (Computer Music), 1997
University of California, Berkeley

B.S. in Computer Science & Applied Mathematics, 1994
University of Virginia, Charlottesville

Technical experience

- Programming languages: Kotlin, Java, shell, SQL, C/C++, C#, javascript, python
- Build tools: git, TeamCity, Jenkins, Tinderbox
- Collaboration tools: Jira, Confluence, Figma, Miro, Zeplin, Bugzilla
- Cloud & containers: EC2, S3, ELB, EMR, docker
- Android libraries: Adjust, Amplitude, Branch.io, Cloudinary, Conductor, Crashlytics, Dagger, Datadog, Epoxy, EventBus, GoogleMaps, Gson, Guava, Hilt, Jetpack, Joda, Loggly, Lottie, MapQuest/MapBox, Mosby MVP, OkHttp, Optimizely, Picasso, PubNub, Realm, Retrofit, Room, RxJava2

Work Experience

ContextLogic, Inc. (wish.com), San Francisco, California **Staff Software Engineer**

March 2021 -

Android Infrastructure team. Full-stack Kotlin/Java + python + scripting. Major focus was advancing an aging codebase to more modern architectural patterns. Introduced Dependency Injection (Hilt) and networking layer (Retrofit). Provide bi-weekly release engineering – own the full release branch process and deployment to Google Play. Added client-side monitoring (Datadog, plus, improvements to in-house; cleaned up A/B test experiment attributions). On the product side, wrote a dynamic shipping address component that supports the full variety of international address formats, including client-side and server-side validation, and, integration with a “use suggested address instead” response flow.

Avast s.r.o., Emeryville, California **Senior Staff Engineer**

July 2016 -
January 2021

Avast acquired AVG in 2016 and took them private. My title changed to Senior Staff Engineer, reporting to the VP of Engineering. I continued working on the white-label carrier family safety applications – please refer to the entries below and *Projects* section for details. Provided programming & architecture, feature ownership, build support, tooling, infrastructure support. In addition to remaining as a cross-team architect and tech lead, I restarted our bi-weekly developer demo and showcase series for the SF Bay offices.

AVG Technologies LLC, Emeryville, California **Director of Engineering**

October 2014 -
July 2016

AVG acquired LocationLabs in 2014. We spent the next two years hitting our contracted financial targets to maximize the payout (\$220MM). I continued to focus on the Android versions of the white-label carrier family safety applications. Please refer to the entry below, and *Projects* section, for details.

Work Experience, cont.

LocationLabs LLC (dba WaveMarket, Inc.), Emeryville, California **Director of Engineering (Mobile), Senior Scientist**

June 2002 -
October 2014

I was one of the first dozen employees at Berkeley-founded, and then Emeryville-based, WaveMarket/LocationLabs, an early-stage startup that received its series A in 2001. We went from no deployed products in 2002 to an acquisition by AVG Technologies in 2014. I wore every engineering hat, starting with responsibility for full-stack client, server, and SysOps to then specializing in mobile development as we grew. We started small – I drove my car over to install the servers, load balancer, and VPN in our first colo space in Oakland.s There were many product pivots along the way. Please refer to the *Projects* section for a sampling, and, I am happy to describe any of them in much more detail on request. At first, these were written for J2ME/BlackBerry, PocketPC, and mobile web (xHTML). Once iOS and Android unseated handsets, I specialized in Android, and, client/server architectural co-design. In addition to mobile development, I was an acting Partner Engineer, visiting carriers after we had signed contracts with them and were implementing APIs/schema design for the integration points (authentication, account management, payment, location data access, unmetered data access, messaging).

Luxxon Corporation, San Jose, California. **Visiting Scientist**

2000-2001

R&D of their multimedia transcoding proxy protocols for discovery and negotiation of client device characteristics and media caching.

IBM Almaden Research Center, Almaden, California **Member of the Technical Staff**

Summer 1999

Graduate Internship and follow-up work with the IBM Almaden T-Spaces middleware project.

BoxerJAM Films, Charlottesville, Virginia **Software Engineer**

Summer 1994

Film company that grew into a casual gaming startup. Wrote the first version of the client and server code for Strike-a-Match, a game deployed to AOL and Yahoo! Games

Projects

- *Verizon Smart Family, AT&T Secure Family, T-Mobile FamilyWhere, Sprint Family Locator, Verizon Family-Base, AT&T FamilyMap* Android apps:

Ongoing contributor (implementation, maintenance) to a 1MM+ LOC Android codebase that comprised various white-label Parental Controls applications. There were two major feature categories. *Controls* which collected data about device usage from a “child” phone and displayed it in rich UIs on a “parent” phone, and, *Location*, map-based features such as geofences, location polling, location check-in, and ride requests.

One specific focus area was the implementation and maintenance of the child-phone data extraction – call, message, & contact list collection, network traffic tracking, and per-application usage (foreground activity) timing. Another focus area was implementing and maintaining the *Content Filtering* library. This was anchored by an on-device VPN service that intercepted only DNS traffic (DNS over TLS man-in-the-middle, or unencrypted port 53), without re-routing application traffic. A “web shield” blocking feature leveraged this control over DNS mappings to support both web blocking and app network traffic blocking. Additionally, we leveraged the Android Accessibility service framework to

- monitor activities to provide app UI auto-minimize, including floating players in PIP,
- detect & disable attempts to uninstall the app, and
- automate setup – enable Device Admin, VPN, and related Settings toggles.

This project went through a major refactor to MVP + Rx when a pair of separated Controls and Location apps were combined, updating an aging codebase to best practices.

In addition to providing software engineering over the lifetime of the app, I migrated to technical leadership in the director/staff role, dealing more with programming architecture, feature ownership (Location and Controls horizontals), API design, build process, testing/debug support, and related tooling & scripting.

- *AT&T FamilyMap* WindowsPhone app: I wrote our WinPhone 7+ implementation of the AT&T family locator. Our partners at AT&T requested that we support it natively for their new phones with the new OS, and pre-load it. Worked at the Microsoft campus in Redmond under NDA finalizing the builds. It ended up preloaded on every Windows phone sold by AT&T.
- *veriplace.com*: Carrier and non-carrier cell phone location as a API service. A suite of thin smart-phone application agents providing end-to-end user-plane locates (hybrid cell-sector/WiFi/GPS), with the option of using the carrier networks (Verizon, AT&T, Sprint) LPS/MLP/GMLC, or, avoiding carrier infrastructure for cost reasons. API/architecture, sole contributor to Windows Mobile implementation, contributor to Android/J2ME/RIM shared codebase.
- *streethive.com*: An early location-based social sharing site: StreetHive and Crunkie were social networks focused on users sharing photos and text/comments atop a map. Supported on handset clients (J2ME, RIM, xHTML, WAP) and web. I worked on the handset client team, and shared responsibility for architecting the backend/APIs such that they were amenable to both web and mobile content access. Java/J2ME front-end, Java/MySQL backend.
- *m.ask.com*: One of the worlds first mobile portals. xHTML-MP/WAP access to the ask.com syndication backend. Provided access to full web search, image search, maps with turn-by-turn directions, weather, horoscopes, and more. Implemented with Java servlets/JSP + MySQL by myself and one other engineer. *The site won two Webby Awards in the Mobile category (both Jury and People's Choice).*
- *cmprssr.com*: In order to view the resulting content discovered via queries on m.ask.com on feature-poor handsets, web pages needed to be transcoded from free-form HTML to valid xHTML-MP. *cmprssr* provided this service at extremely high volume (millions/day). Written in perl by myself and one other engineer.
- *IAC gps.ask.com*: voice turn-by-turn navigation on GPS-enabled feature phones to aggregated InterActiveCorp (IAC) properties CitySearch, Evite, Ticketmaster, Ask.com. The underlying technology innovation used to manage app complexity under memory and processing constraints was a declarative UI screen specification augmented with novel XML-defined action flows called "chains". These XML descriptions were compiled down into primitives for efficiency, and could be updated at runtime, to overcome the lack of a ClassLoader in JavaME.
- *MapMe & NearHere*: Early on-handset point-of-interest finders + route generator, communicating to a custom geoserver backend. WaveMarket's first handset software product releases. Responsible for co-location hosting, OS installation and configuration, sysadmin / operations, Cisco VPN to partner site, hardware load-balancing and failover (via Alteon ACEdirector), data integration, plus all the client and server application software itself. This on very limited hardware – code size was limited to 100KB, heap to 256KB.

Patents & Publications

Jesse Meyers, Scott Hotes, Todd Hodes

System and method for range search over distributive storage systems

Patent #8924365, issued 12/2014.

Brian Martin, Joseph Augst, Jesse Meyers, Todd Hodes, Scott Hotes

System and method for managing third party application program access to user information via a native application program interface

Patent #8683554, issued 3/2014.

Patents & Publications, cont.

Adrian Freed, Todd Hodes, John Hauser

Apparatus and Method of Additive Synthesis of Digital Audio Signals Using a Recursive Digital Oscillator

Patent #7317958: UC Berkeley Regents, Berkeley, California, issued 1/2008.

Todd Hodes

Discovery and Adaptation for Location-Based Services

Ph.D. thesis, University of California, Berkeley. 2002.

Randy H. Katz, thesis advisor

Todd Hodes, Steve Czerwinski, Ben Zhao, Anthony Joseph, Randy H. Katz

An Architecture for Secure Wide-area Service Discovery

ACM Wireless Networks Journal, Special Issue

Volume 8, Issue 2/3, March/May 2002, pp. 213-230

Michelle Munson, Todd Hodes, Thomas Fischer, Keung Hae Lee, Tobin Lehman, Ben Zhao

Flexible Internetworking of Devices and Controls

25th Annual Conference of the IEEE Industrial Electronics Society (IECON),
San Jose, CA, December 1999.

Todd D. Hodes, Randy H. Katz

Composable Ad hoc Location-based Services for Heterogeneous Mobile Clients

ACM Wireless Networks Journal, Special issue on Mobile Computing

Vol. 5, No. 5, October 1999, pp. 411-427.

Todd Hodes, Randy H. Katz

A Document-based Framework for Internet Application Control

2nd USENIX Symposium on Internet Technologies and Systems

Boulder, CO, October 1999, pp. 59-70.

Todd Hodes, John Hauser, Adrian Freed, John Wawrzynek

Second-order Recursive Oscillators for Musical Additive Synthesis Applications on SIMD and VLIW Processors

International Computer Music Conference (ICMC), Beijing, China, October 1999.

Steve Czerwinski, Ben Zhao, Todd Hodes, Anthony Joseph, Randy H. Katz

An Architecture for a Secure Service Discovery Service

5th ACM/IEEE International Conference on Mobile Computing

Seattle, WA, August 1999, pp. 24-35.

Steven McCanne, Eric Brewer, Randy Katz, Elan Amir, Yatin Chawathe, Todd Hodes,

Ketan Mayer-Patel, Suchitra Raman, Cynthia Romer, Angela Schuett, Andrew Swan,

Teck-Lee Tung, Tina Wong, Kristin Wright

MASH: Enabling Scalable Multipoint Collaboration

ACM Computing Surveys, Volume 31, No. 2es, June 1999.

Todd Hodes, John Hauser, Adrian Freed, John Wawrzynek, David Wessel

A Fixed-point Recursive Digital Oscillator for Additive Synthesis of Audio

IEEE International Conference on Acoustics, Speech, and Signal Processing,
Phoenix, Arizona, March 1999.

Todd Hodes, Mark Newman, Steven McCanne, Randy H. Katz, James Landay

Shared Remote Control of a Videoconferencing Application: Motivation, Design, and Implementation

SPIE Multimedia Computing and Networking 1999,

San Jose, California, January 1999, pp. 17-28.

Patents & Publications, cont.

Eric Brewer, Randy H. Katz, Elan Amir, Hari Balakrishnan, Yatin Chawathe, Armando Fox, Steve Gribble, Todd Hodes, Giao Nguyen, Venkat Padmanabhan, Mark Stemm, Srinu Seshan, Tom Henderson
A Network Architecture for Heterogeneous Mobile Computing,
IEEE Personal Communications Magazine, October 1998. Invited Paper.

Todd D. Hodes, Randy H. Katz
Enabling 'Smart Spaces:' Entity Description and User Interface Generation for a Heterogeneous Component-Based Distributed System
DARPA/NIST Smart Spaces Workshop,
Gaithersburg, Maryland, July 1998. pp. 7/44-7/51.
also, UC Berkeley Technical Report CSD/98/1008.

Todd D. Hodes, Randy H. Katz, Eduard Servan-Schreiber, Larry A. Rowe
Composable Ad hoc Mobile Services for Universal Interaction
3rd ACM/IEEE International Conference on Mobile Computing,
Budapest, Hungary, September 1997, pp. 1-12.
Best Paper award.

Todd D. Hodes
Recursive Oscillators on a Fixed-Point Vector Microprocessor for High Performance Additive Synthesis of Audio
MS report, December 1997. UCB Technical Report CSD/98/1007.

Randy H. Katz, Eric A. Brewer, Elan Amir, Hari Balakrishnan, Armando Fox, Steve Gribble, Todd Hodes, Dan Jiang, Giao Nguyen, Venkat Padmanabhan, Mark Stemm.
The Bay Area Research Wireless Access Network (BARWAN)
41st IEEE Computer Society International Conference (COMPCON), 1996.

W. Temple Fennell, Jr., Todd Hodes, Scott Witherell, Chris Goebel, Rajesh Thakkar, Thomas Schwenk
Method of Managing Multi-Player Game Playing Over a Network
Patent #5695400: BoxerJAM Films, Charlottesville, Virginia, issued 12/1997.

Todd D. Hodes, Bernard A. McCoy, Gabe Robins
Dynamically Wiresized Elmore-Based Routing Constructions
1994 IEEE International Symposium on Circuits and Systems,
London, England, May 1994, Volume I, pp. 463-466.