Todd David Hodes

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Education

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

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

Skills

- Kotlin, Java, shell (sh/bash/ksh), SQL, C, C++, C#, JavaScript, python, Go, Rust.
- Reactive programming: ReactiveX, RxKotlin, RxJava2, Java8 streams, Kotlin flows.
- Databases: MySQL, postgres, Realm, Room.
- AWS: EC2, S3, ELB, EMR, certs, security, provisioning.
- Containers: docker, kubernetes.
- Dependency injection: Dagger, Spring, Koin, Hilt.
- Android libraries: Kotlin, RxJava2, Mosby Model/View/Presenter (MVP), ViewModel, Jetpack, Material Design, Amplitude, Adjust, Conductor, Branch.io, Cloudinary, Dagger, Epoxy, Lottie, EventBus, Crashlytics, Google and MapQuest/MapBox Maps, Gson, Guava, Joda, OkHttp/Retrofit, Optimizely, Picasso, PubNub, Realm, Room, Loggly.
- Build tools: git, TeamCity, Jenkins, Tinderbox.
- Collaboration tools: Jira, Confluence, Miro, Zeplin, Bugzilla.

Work Experience

Senior Staff Engineer — *July 2016 - January 2021*
Avast, s.r.o.

Avast acquired AVG in 2016 and took them private. I moved to a senior staff engineer position, reporting directly to the VP of Engineering. In addition to coding, I ran a bi-weekly developer demo and showcase series. Continued working on the family of white-label family safety applications for cellular telephone carriers, largely on the Verizon and AT&T products as they were the highest revenue. Worked in a monorepo with modules per feature and flavors for each app. See below.

Director of Engineering (Mobile) & Architect — *October 2014 - July 2016*
AVG Technologies, LLC

AVG acquired LocationLabs in 2014 for $220,000,000.00. Much of the team stayed on to continue the business, including myself. I continued working on the android version of the white-label family safety applications. Worked in a monorepo with modules per feature and flavors for each app. See below.

Senior Software Engineer & Director of Mobile Technologies — *June 2010 - October 2014*
LocationLabs, LLC

In 2010, WaveMarket rebranded to LocationLabs in preparation for IPO or sale. I continued working on the white-label family safety android applications. See below.

Work Experience, cont.

Senior Scientist & Software Engineer — *June 2002 - June 2010*
WaveMarket, Inc.

As one of the first employees at Berkeley-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 complete responsibility for SysOps, server, and client – writing tools and software for all three – to then specializing in Mobile Dev as we grew from a dozen engineers, added sysadmin, grew to thirty engineers, and finally to one hundred. Once iOS and Android unseated BlackBerry/J2ME/Symbian/PocketPC, I specialized in Android, and, co-design of mobile architecture. In addition to mobile dev, I provided Partner Engineering/integration, visiting carriers around the world after we had signed contracts with them and were hammering out integration points (authentication, location access, providing unmetered data atop metered plans, APIs/schema design, etc).

The products I worked on are highlighted in the *Projects* section.

Graduate Student Researcher, UC Berkeley Computer Science division — *1995-2002*

Work on mobile computing & location-based applications [WINET99, USITS99, PersComm98]; multimedia networking [CompSurveys99, MMCN99]; peer-to-peer service location [Mobicom99]; fast sine synthesis techniques with vector instruction sets [ICASSP99, Patent #7317958].

Technical Staff, Luxxon corporation, San Jose, California. — *2000-2001*

Part-time work assisting with R&D, specifically protocols for discovery and negotiation of client device characteristics and media caching, in service of their media transcoding software and hardware.

Graduate Internship and Contracting, IBM Almaden Research Center, Almaden, California — *1999-2000*

Summer internship and follow-up work with the IBM Almaden TSpaces middleware project, as detailed in the [IECON99] paper.

Graduate Student Instructor, UC Berkeley Computer Science division — *Fall 1996*

Teaching Assistant for *Computer Architecture and Engineering* (CS152), taught by David Patterson and Sun Microsystems visiting professor Robert Yung.

BoxerJam Films, Charlottesville, Virginia — *1994*

Design and implementation of a multi-platform client/server system communicating via both modem and IP networks. Addressed wide-area latency-hiding and user interface issues as detailed in [Patent #5695400]. The resulting game, "Strike-A-Match," was deployed to America Online (AOL) and Yahoo! games.

Unix Consultant, U. of Virginia Information, Technology, and Communications (ITC) — *1993-1994*

Answered questions via phone dealing with issues on all the University's available UNIX platforms, including SunOS, AIX, IRIX, and NeXT.

HBO & Company, Advanced Technologies Group, Atlanta, Georgia — *1991, 1993*

Designed and implemented interfaces and utilities to assist integrating PC-based clients with their legacy mainframe (MV/40000) medical system.

Projects

- Verizon Smart Family Android app: programming & architecture.
- AT&T Secure Family Android app: programming & architecture.
- T-Mobile FamilyWhere Android app: programming & architecture.
- Sprint Family Locator Android app: programming & architecture.
- Verizon FamilyBase Android app: programming & architecture.

- AT&T FamilyMap Android app: programming & architecture
- AT&T FamilyMap Windows Phone app: Sole contributor, wrote our implementation. AT&T requested that we support it natively rather than as web-only. Worked at the Microsoft campus in Redmond under NDA and security protocols finalizing the builds for when the OS was released. They loved it, app was a preload on every Windows phone in the AT&T store.
- `veriplace.com`: Carrier and non-carrier cell phone location as a API service. A suite of thin smartphone 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`: 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 the Webby Award in the Mobile category.
- `cmprssr.com`: In order to view the resulting content discovered via queries on m.ask.com, 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 InterAactiveCorp (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*: on-handset point-of-interest finders + route generator, communicating to a custom geoserver backend. WaveMarkets first handset software product releases. Responsible for hardware acquisition and 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. JAR 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.

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 Califonia, Berkeley. 2002.
Randy Katz, thesis advisor

Patents & Publications, cont.

T. Hodes, S. Czerwinski, B. Zhao, A. Joseph, R. 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

M. Munson, T. Hodes, T. Fischer, K. H. Lee, T. Lehman, B. Zhao
"Flexible Internetworking of Devices and Controls"
25th Annual Conference of the IEEE Industrial Electronics Society (IECON),
San Jose, CA, December 1999.

T. D. Hodes, R. 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.

T. Hodes, R. 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.

T. Hodes, J. Hauser, A. Freed, J. Wawrzynek
"Second-order Recursive Oscillators for Musical Additive Synthesis
Applications on SIMD and VLIW Processors,"
International Computer Music Conference (ICMC), Beijing, China, October 1999.

S. Czerwinski, B. Zhao, T. Hodes, A. Joseph, R. 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, et. al.
"MASH: Enabling Scalable Multipoint Collaboration"
ACM Computing Surveys, Volume 31, No. 2es, June 1999.

T. Hodes, J. Hauser, A. Freed, J. Wawrzynek, D. 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.

T. Hodes, M. Newman, S. McCanne, R. H. Katz, J. 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.

E. Brewer, R. H. Katz, E. Amir, H. Balakrishnan, Y. Chawathe, A. Fox, S. Gribble, T. Hodes, G. Nguyen,
V. Padmanabhan, M. Stemm, S. Seshan, T. Henderson
"A Network Architecture for Heterogeneous Mobile Computing,"
IEEE Personal Communications Magazine, October 1998. Invited Paper.

T. D. Hodes, R. 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.

Patents & Publications, cont.

T. D. Hodes, R. H. Katz, E. Servan-Schreiber, L. 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.

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

R. H. Katz, E. A. Brewer, E. Amir, H. Balakrishnan, A. Fox, S. Gribble, T. Hodes,
D. Jiang, G. Nguyen, V. Padmanabhan, M. Stemm.
"The Bay Area Research Wireless Access Network (BARWAN),"
41st IEEE Computer Society International Conference (COMPCON), 1996.

W. T. Fennell, Jr., T. Hodes, S. Witherell, C. Goebel, R. Thakkar, T. Schwenk,
"Method of Managing Multi-Player Game Playing Over a Network,"
Patent #5695400: BoxerJAM Films, Charlottesville, Virginia, accepted 12/97.

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

Honors, Awards, Achievements

- 2007 Webby Award (Mobile) & Webby Peoples Choice Award (Mobile) for m.ask.com
- Best Paper Award, 3rd ACM/IEEE International Conference on Mobile Computing, 1997
- California Fellowship in Microelectronics, University of California, Berkeley, 1994-1995
- Louis T. Radar Award, U. of Virginia Computer Science Department, April 1994
- Dean's List, Intermediate Honors, Tau Beta Pi, Golden Key, University of Virginia 1991-1995
- National Merit Scholar, 1990
- American Computer Science League All-Star Contest, first place in division, Washington, DC, 1990
- Duke University Summer Computing Program, Full Scholarship, 1987