

# Agoston Petz

*Ph.D., Software Engineering*

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I'm a dedicated and passionate software engineer, a proponent of agile methodologies, a full-stack web developer with a background in research, who loves data, and to share knowledge.

## Education - The University of Texas at Austin

Dec. '12	<b>Ph.D., Software Engineering</b> , Advisor: Christine Julien. Dissertation Topic: Adaptive Middleware for Delay-Tolerant Networks, GPA: 3.95/4.0
May '08	<b>M.S.E., Electrical and Computer Engineering</b> , GPA 3.95/4.0
May '06	<b>B.S., Electrical and Computer Engineering</b> , Graduated with Honors, GPA 3.80/4.0

## Knowledge and Skills

Languages Concepts Tools	▷ Java, Javascript, C/C++, Perl, (PL/)SQL, Python, MATLAB, LabVIEW ▷ Agile development, web services, RESTful design, eCommerce, machine learning ▷ Spring, Guice, JUnit, Mockito, AWS (Redshift, S3, EC2, MongoDB), JMeter, Jersey, Jackson, Solr, Elasticsearch, Maven, Git, Subversion, Jetty, Apache, Django, Dropwizard • <b>Dev Tools:</b> IntelliJ, Eclipse, Splunk, GCC, GDB, and open source development toolchain, Visual Studio, Matlab • <b>Project management:</b> Agile/SAFe, Jira, Rally
Networks	▷ TCP/IP protocols, 802.11a/b/g MACs, Zigbee, Ad-Hoc, Mesh, and Delay-Tolerant Networks, OMNeT++/OMNEST Network Simulators, TinyOS development, sensor network design and implementation, OpenWRT
OS	▷ MacOS, Linux (app & kernel development), BSD, Windows NT-based, TinyOS

## Professional Experience

Aug '16 – Present	<b>Amazon.com, Inc/Audible.</b> , <i>Software Development Engineer @ Audible</i> , Boston, MA. Worked on Audible's Fraud & Abuse team, helped develop novel ML-based <i>customer trust modeling</i> algorithm, and accompanying visualizer, tracked down major abuser networks. Designed our multi-service data layer and data ingestion pipeline utilizing AWS Redshift and S3. Led cross-team efforts to close loopholes in our services. Acted as our team's scrum master and helped lead a company-wide agile transformation to SAFe.
Jan '13 – Jul '16	<b>HomeAway.com, Inc.</b> , <i>Senior Software Engineer</i> , Austin, TX. Full-stack web developer on order and payment processing team. Helped design and implement various invoicing, search, admin, and order-handling services, worked

	with Product, Finance, Sales stakeholders on requirements specifications. Helped design next-generation e-commerce models, entities, and platform.
Nov '11 – Nov '12	<b>M87 (then Wibole), Consultant - Wireless Networks and Middleware</b> , Austin, TX. Consulting for start-up company, designing and implementing novel multi-hop wireless solution to improve coverage and capacity of cellular networks.
May – Aug '11	<b>Deutsche Telekom Labs, Graduate Research Intern</b> , Berlin, DE. Designed and implemented MADServer, a context-driven middleware that provides data offloading services to dynamic web applications. Work resulted in a European patent.
Jun – Aug '05	<b>Microsoft, Software Developer in Test</b> , Redmond, WA. Developed a test suite on Windows Vista for several implementations of the Trusted Computing Group's software stack (TSS). Worked directly with several major TCG software vendors. Worked with Microsoft's Next Generation Security Computing Base team (NGSCB) on Trusted Platform-enabled services and applications.
May – Aug '04	<b>IBM - Linux Technology Center, Co-op Pre-Professional Programmer</b> , Austin, TX. Helped develop BogoSec, a source code scanning utility, with members of the Linux Technology Center's security team. Contributed to an auto-installer program for SUSE Linux Enterprise Edition.

## Academic Experience

### @ The University of Texas at Austin:

May '07 – Dec '12	<b>Graduate Research Assistant, Mobile and Pervasive Computing Lab.</b> Designing and implementing a delay-tolerant networking stack and middleware to supporting delay-tolerant applications and services. Investigating dynamic, context-based network stack recomposition and stack-swapping for delay-tolerant networks.
Sep '09 – Dec '12	<b>Graduate Research Assistant, Pharos Testbed.</b> Working with mobile autonomous robots, designed and wrote mobility analysis framework and realworld-to-simulation mobility model translation tools, writing code to manage network hardware and connectivity, designing and executing experiments.
Various	<b>Teaching Assistant.</b> <ul style="list-style-type: none"> <li>▷ 2012 - Algorithms, Software Metrics</li> <li>▷ 2011 - Formal Methods in Computing</li> <li>▷ 2006-07 - Introduction to Electrical Engineering</li> </ul>

Sep '10 – May '10	<b>Undergraduate Research Project Manager.</b> Managed and advised undergraduate robotics project
Jan '03 – May '06	<b>Undergraduate Researcher, <i>The HoneyNet Project.</i></b> Worked with the HoneyNet Research Alliance, an international team of developers, on network monitoring tools to profile malicious hackers. Helped develop client-side honeypots to find malicious sites and browser vulnerabilities. Also worked on Sebek, a kernel-level modification to allow remote system monitoring. Test lead for the Honeywall, a boot-able linux-based network monitoring and IDS solution.

## Selected Activities

2016 - '17	<b>Cambridge School Volunteers STEM Outreach Program - <i>Company Coordinator</i></b> Recruited volunteers and managed an office-wide initiative to provide 1-on-1 mentorship to 7th grade students in the local Cambridge school district, this was the first initiative of its kind at the Audible Cambridge office.
2012	<b>Technical Program Committee Memberships.</b> <ul style="list-style-type: none"> <li>▷ ACM International Workshop on Hot Topics in Planet-Scale Measurement (HotPlanet 2012)</li> <li>▷ Demo Chair, 4th Annual Conference on Extreme Communications, (ExtremeCom 2012).</li> </ul>
2011	<b>Invited Talk:</b> “ <i>A Case for Context in Delay-Tolerant Networks</i> ”, 4th DisCoTec Workshop on Context-aware Adaptation Mechanisms for Pervasive and Ubiquitous Services, (CAMPUS 2011).
Summer '09, '10	<b>MITE Engineering Summer Camp.</b> Presented and demonstrated autonomous robots to pre-collegiate students during MITE summer camp.
Summer '06	<b>Texas 4000 for Cancer, <i>Rider and Web Committee.</i></b> Cycled 4500 miles from Austin, TX to Anchorage, AK with a student-led and student-run charity organization to raise money for, and to promote the cause of the American Cancer Society. Planned and organized ride with 40 other university students, promoted charity events, designed and built registration website, raised money.
2004 – '06	<b>Vice President, <i>IEEE Communications Society (ComSoc), UT Student Branch.</i></b>

## Honors and Awards

- ▷ Engineering Foundation Endowed Graduate Presidential Scholarship
- ▷ EDGE Scholar
- ▷ First Year Engineering Honors Program
- ▷ Friends of Alec Engineering Scholarship 2002-2006
- ▷ National Merit Commended Scholar

## Patents

European Union Patent - *Delivering Content From a Server to a Client*  
(Granted Aug. '15 - EP 2575323 B1/EP 20110183520)  
Adaptive, context-based, alternate content delivery mechanism for cellular networks.  
Deutsche Telekom AG; Technische Universität Berlin.

## Publications

- ▷ A. Petz, A. Lindgren, P. Hui, and C. Julien. "[MADServer: An Architecture for Opportunistic Mobile Advanced Delivery](#)". ACM MobiCom Workshop on Challenged Networks. 2012
- ▷ A. Petz, C-L. Fok, and C. Julien. "[Experiences Using a Miniature Vehicular Network Testbed](#)". Proceedings of the 9th ACM International Workshop on Vehicular InterNetworking, Systems, and Applications (VANET '12).
- ▷ A. Petz, A. Hennessy, B. Walker, C-L. Fok, and C. Julien. "[An Architecture for Context-Aware Adaptation of Routing in Delay-Tolerant Networks](#)". Proceedings of the 4th Extreme Conference on Communication. 2012.
- ▷ A. Petz, B. Walker, C-L. Fok, C. Ardi and C. Julien. "[Network Coded Routing in Delay Tolerant Networks: An Experience Report](#)". Proceedings of the 3rd Extreme Conference on Communication. 2011.
- ▷ B. Walker, C. Ardi, A. Petz, J. Ryu, and C. Julien. "[Experiments on the Spatial Distribution of Network Code Diversity in Segmented DTNs](#)". Proceedings of the ACM MobiCom workshop on Challenged Networks (CHANTS '11).
- ▷ A. Petz, T. Jun, N. Roy, C-L. Fok and C. Julien. "[Passive Network-Awareness for Dynamic Resource-Constrained Networks](#)". Proceedings of the 11th IFIP International Conference on Distributed Applications and Interoperable Systems (DAIS '11).

▷ A. Petz, B. Walker, C. Ardi and C. Julien. "[The Click Convergence Layer: Putting a Modular Router Under DTN2](#)". Proceedings of the 2nd Extreme Workshop on Communication. 2010. **Received Best Student Paper Award.**

▷ A. Petz and J. Enderle and C. Julien. "[A Framework for Evaluating DTN Mobility Models](#)". Proceedings of the 1st Workshop on Scenarios for Network Evaluation Studies. 2009.

▷ A. Petz and C. Julien. "[An Adaptive Architecture to Support Delay Tolerant Networking](#)". Proceedings of the 7th Workshop on Adaptive and Reflective Middleware. 2008.

▷ A. Petz and C. Julien. "[The MaDMAN Middleware for Delay-Tolerant Networks](#)". Poster at HotMobile '10.