

Lance Finn Helsten

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PROFESSIONAL CAREER

- 2015-01/2016-11; Senior Software Engineer; **Vivint**; Lehi, Utah
- 2010-07/2014-12; Principal Software Engineer; **Mozy**; Pleasant Grove, Utah
- 2001-04/Present; **Engineer Level 7**; **Flying Titans, Inc.**; Orem, Utah
- 2007-10/2010-06; **Principal Software Engineer**; **Avocent Corporation**; Salt Lake City, Utah
- 2002-08/2008-04; Adjunct Instructor; **Computer Science**, Utah Valley University; Orem, Utah
- 2000-02/2001-04; Senior Software Engineer; GeoDiscovery; Orem, Utah
- 1999-02/2000-02; Senior Software Engineer; AXENT Technologies, Inc.; American Fork, Utah
- 1997-08/1999-02; Senior Software Engineer; Digital Technologies, Inc.; Orem, Utah
- 1994-03/1997-08; Senior Software Engineer; LinguaTech International; Orem, Utah
- 1990-10/1994-02; Software Engineer; WordPerfect, Inc.; Orem, Utah

EDUCATION

- M.S., **Computational Engineering & Science**, December 2016, **University of Utah**, Salt Lake City, Utah. Master's Project: "Global Navigation Satellite System (GNSS) Error Correction".
- B.S., **Computer Engineering**, Summa Cum Laude, Computer Science Outstanding Graduate, $\Phi\Theta\K$, April 2007, **Utah Valley University**, Orem, Utah.
- B.S., **Mathematics**, minor **Computer Science**, May 1997, **University of Utah**, Salt Lake City, Utah.

SKILLS

- System Architectures REST, SOA, and Event Driven
- Languages, Modeling UML 2.5
- Languages, Programming Python, Swift, Objective C, SQL, and C
- Languages, Markup YAML, XML, RDF, and HTML/CSS2
- Systems iOS, MacOS X, and UNIX (GNU/Linux & BSD)
- Database PostgreSQL and SQLite
- Documentation $\text{T}_{\text{E}}\text{X}$, $\text{L}_{\text{A}}\text{T}_{\text{E}}\text{X}$, reStructuredText, and PostScript

ORGANIZATIONS

- **The Institute of Electrical and Electronics Engineers (IEEE)**; Senior Member (2009-10); Member (1996-09).
- **Association for Computing Machinery (ACM)**; Senior Member (2010-07); Professional Member; (1998-09).
- Boy Scouts of America (BSA); Scouter (1984-09); Current Role: Varsity Coach.
- **Civil Air Patrol (CAP)**; Major (2015-11); Member (1987); Current Role: Wing Assistant Director of Operations.

CERTIFICATIONS

- **ScrumAlliance** Certified Scrum Master (2012)
- **Civil Air Patrol (CAP)** Search & Rescue / Disaster Relief Pilot (2011)
- **Leave No Trace** Certified Master Educator (2005)
- **Tread Lightly** Certified Master Trainer (2005)
- Amateur Extra Radio Operator (W3IS)
- NRA Certified Rifle Instructor (2001)
- D.O.D. Secret Clearance (1985-1998)

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HONORS AND AWARDS

- Computing Networking Science Outstanding Graduate, School of Technology and Computing, Utah Valley University, 2007-04-26.
- Phi Theta Kappa ($\Phi\Theta\K$) National Honor Society, 2005.
- Eagle Scout, Boy Scouts of America, 1984-09-30.
- Order of the Arrow, Brotherhood, Boy Scouts of America, 2010-10-13.
- Woodbadge, Boy Scouts of America, 2000-06-24.
- Ira C. Eaker Award (C/LTC), Civil Air Patrol, 1987-07-01.

OPEN SOURCE PROJECTS

- [pyietflib](#); 2012-08/ Present; Architect and principal engineer of the project.
- [Term Base eXchange \(TBX\) Utilities](#); 2001-04/ Present; Architect and principal engineer of the project.
- [pyzombie](#); 2010-03/ Present; Architect and principal engineer of the project.
- [pywumpus](#); 2006/ Present; Translation of 1970's game into python.

RESEARCH AND DEVELOPMENT PROJECTS

- Vivint Space Monkey iOS Client; 2015-03 – 2016-11
Member of the Space Monkey iOS client team to rebuild the provisioning system and provide a custom server authentication proxy to be used by the iOS media player. After taking over project lead, I started the process of conversion from Objective C to Swift while improving the source code to separate the model and controller code to allow the model to be used in both iOS and tvOS with platform specific controllers. Implemented automated UI testing to improve testing capability to allow quicker releases to the AppStore.
- Mozy iOS Client; 2014-02 – 2014-12
I led the iOS Mozy mobile application. After taking over the project, I led the change to drop older iOS versions at a more rapid pace, upgraded code base to use ARC and modern Objective-C syntax, and started automated testing at unit and UI levels. I then was responsible for moving the client to China to be placed into maintenance.
- Mozy MacOS Client; 2010-07 – 2014-02
I led the MacOS backup client team with the primary mission to improve user online backup and restore experience. Started and led the effort as Scrum Master to change the team from ad hoc plan based project management to agile project management using Scrum which resulted in improvement of estimation accuracy to the Product Owner and management where the team delivered all releases on time for 18 months; our team was used as a model by other teams in the company changing to Scrum. Designed and rebuilt the MacMozy status sub-system so it could display status from various client applications and daemons. Designed and built the Data Shuttle subsystem for the MacMozy client. I then was responsible for moving the client to China to be placed into maintenance.
- Avocent AMP RBAC Authorization; 2007-10 – 2010-06
I architected and engineered the Avocent Management Platform Authorization (AMPAuthz) system from original Role Based Access Control mathematical principles, as well as leading the team that designed, tested, and built the database schema, webservice interfaces, configuration, and human interaction of the management and capability resolution. The AMPAuthz role based system could handle arbitrary subjects, actions, and resources with keyed attributes and time limitations applied to each of these entities. The system was capable of handling 10,000 roles, 10,000 subjects, 10,000 actions, and 100,000 resources with a rate of 500 capability resolutions per second from an enterprise service bus assembly through WSDL interface.
- iPod/iPhone/iPad; 2009-01 – Present

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I designed and released MovieQuote for the iPod/iPhone, which is a social application that will deliver movie and television shows given a quote. I designed and released Astrodate for iPod/iPhone, which provides the current time in various date time formats for astronomers: julian day, modified julian day, etc.

- Avocent AMP Configuration Management; 2007-10 – 2010-06
I worked and consulted with the AMP configuration team in establishing coding convention, documentation, unit test, integration test, and code coverage standards such that build, unit test, and integration test time was reduced from 2.5 hours to 20 minutes, and test coverage in code increased from 1% to 60% in many sub-systems.
- Avocent AMP Automated Quality Assurance; 2009-09 – 2010-02
I mentored, worked, and consulted with the AMP QA team to reorganize and architect their automated acceptance testing framework. The efficiency of the QA team to produce new automated acceptance tests through code reuse, code consistency, and common test libraries was improved by 200% over their previous system. This team was able to run 1,000 acceptance tests over 17 different OS & RDBMS combinations to give 17,000 reportable results in one hour after a build was produced.

REFEREED JOURNAL ARTICLES

Lance Finn Helsten, “Python Switch Statement”, *The Python Papers* (Dec 2007): Volume 2(4), pp. 58–63. <http://pythonpapers.org/>, URN:SICI:1834-3147(200712)2:4<58:PSS>2.0.CO;2-Y.

Wikipedia contributors, “Augmented Backus–Naur Form”, *Wikipedia, The Free Encyclopedia*, <http://en.wikipedia.org/wiki/ABNF> (accessed July 26, 2006).

SEMINARS

Lance Finn Helsten, “Global Navigation Satellite System (GNSS) Error Correction”, Department of Mathematics, University of Utah, 2013.

Lance Finn Helsten, “Balancing Robot II”, Utah Valley State College, 2007.

Lance Finn Helsten, Expert Witness, ISO/TC 37/SC 3/WG 3 Data Interchange Conference, ISO/DIS 30042 Term-Base eXchange (TBX) Format Specification Technical Committee, 2007, Provo, Utah.

Lance Finn Helsten, “Brief Introduction to Real Time Operating Systems”, Utah Valley State College, 2005.

Lance Finn Helsten, “IPv4 v. IPv6: Summary of Differences”, Utah Valley State College, 2004.

V. Crandall, C. Snow, and L. Helsten, “Protecting Yourself from Instabilities in Third Party Software”, 15th International Conference and Exposition of Testing Computer Software, 1998.

COURSES TAUGHT

- CS 1030—Foundations of Computer Science, Utah Valley University, Spring 2008
- CS 1030—Foundations of Computer Science, Utah Valley University, Fall 2007
- CS 1030—Foundations of Computer Science, Utah Valley University, Summer 2007
- CNS 1000—Introduction to the Science of Computing, Utah Valley State College, Spring 2003
- CNS 4190—Distributed Enterprise Software Architecture, Utah Valley State College, Fall 2002