# A. Leah Zulas, Ph.D.

Phone : (509) 828-2971
Email : alzulas@alzulas.com
Website : alzulas.com

**SUMMARY**

- Data driven scientist with quantitative data analysis, machine learning, and programming skills
- Computer science research in using machine learning and predictive models to better understand human behavior and preferences
- Psychology research in user experience and behavioral patterns
- Over seven years of experience working on interdisciplinary teams toward large scale research and applied projects

**EDUCATION**

| | |
|---|---|
| 2014-2017 | Masters in Computer Science, Washington State University |
| 2009-2014 | PhD in Experimental Psychology, Washington State University |
| 2007-2009 | Masters in Experimental Psychology, Western Illinois University |
| 2005-2007 | Bachelor of Science in Psychology, Western Illinois University |

**SKILLS**

- Statistical tools - SPSS, MPlus, **R/RStudio**, Weka
- C, C++, C#, **Python**, Objective-C, Swift, Javascript, Java, LaTeX, D3.js
- Application of **machine learning** and **reinforcement learning** algorithms
- MySQL, ROS, Git, Linux, and Apache

**EMPLOYMENT EXPERIENCE**

**Contract Developer –** *Various Locations* 2017

- Developed a web tool for clinical psychologists so users could give questionnaires to clients and then review the data and create meaningful visualizations for therapy sessions using Node.js, Javascript, HTML5, Python, and Apache
- Web tool also includes statistical models and calculations using R and visualizations of these outcomes using D3.js
- Developed an iOS app for a podcast show so users could learn more about the hosts, communicate with the hosts, and listen to new podcasts using Swift 4
- Developed a basic collection game in Unity using C# and ported it to iOS and Android

**Technical Lead** - *NSF Solar Decathlon Smart Home Project* 2015-2017

- Managed, designed, implemented, and tested the WSU Solar Decathlon Smart Home Project
- Creating new reinforcement learning applications for smart home notification system
- Applying machine learning models built for a different smart home to new applications using Weka trained models, Python, and NODE.js
- Built energy efficient smart technology with an interdisciplinary team
- Experimental design and statistical analysis for human robot interaction projects. Projects researched: interactions with basic robotics and reinforcement learning agents
- Soldered and programmed small electronics for smart home use
- Mentored and managed a four-person development team
- Front-end programming and design with Swift 3 for iPhone and iPad
- Back-end programming and architecture with Python, NODE.js, and Debian

**User Experience Researcher** - *Samsung Research America* Summer 2015

- Built prototypes with an interdisciplinary design team using JavaScript, C++, and small electronics
- Experimental design and statistical analysis for individual and team projects
- Collaborated with multiple teams and backgrounds

**A. Leah Zulas**

**CASAS Assistive Smart Home Researcher -** *Washington State University* 2010-2014

- Studied and implemented machine learning algorithms for new smart home and internet of things applications using Weka and Java
- Created custom tailored user interfaces and data visualizations for professional and non-professional caregivers with D3.js
- Prototyped wearable and smart home devices for user testing, including hardware and interface components with Arduino in C++
- Leveraged design principles and research to recommend user experience improvements for accessibility and older adults
- Interviewed caregiver groups to better understand key stakeholders
- Built and tested assistive smart technology with an interdisciplinary team

**Executive Director** - *InfoSec Unlocked Non-Profit* 2014-Present

- Managing 20+ volunteers for large events and educational experiences
- Creating events to assist a large community from zero budget
- Built a responsive website using Bootstrap

**Usability Researcher** - *Schweitzer Engineering Laboratory* 2013-2014

- Built information architecture to suit high level tasks for enterprise software
- Designed future enterprise software for utilities in C#
- Advocated the application of usability research for existing and future projects

**User Testing and Interface Design Contractor** - *SimpleC, LLC* Summer 2012

- Interviewed caregiver groups to better understand key stakeholders
- Data analysis and query construction with SQL database
- Created custom tailored user interfaces and data visualizations for care management groups

**MEMBERSHIPS**

Society of Women Engineers, 2014-Present
Associate for the Advancement of Artificial Intelligence, 2017-Present
Human Factors and Ergonomics Society Member, 2010-Present
Association for Computing Machinery SIG-CHI Member, 2010-Present

**SELECT PUBLICATIONS & PRESENTATIONS**


Zulas, A.L. (2017). *Modifying smart home to smart phone notifications using reinforcement learning algorithms* (Masters thesis, Washington State University).

Zulas, A.L., Franz, K.I., Griechen, D., & Taylor, M.E. (February, 2017). Solar decathlon competition: Towards a solar-powered smart home. Oral presentation by Zulas, A.L. at Association for the Advancement of Artificial Intelligence 2017, San Francisco, CA

Zulas, A.L. (2014). *Graphically Visualizing Quantitative Smart Home Data* (Doctoral dissertation, Washington State University).

Zulas, A.L. & Crandall, A.S. (2014). Needs of caregivers in the use of smart home technology. A Chapter in *Handbook of Smart Homes, Health Care and Wellbeing,* edited by van Hoof, J., Demiris, G., & Wouters, E.