CHRISTIAN VÁZQUEZ

ENGINEERING INNOVATION

PROFILE

Multidisciplinary engineer passionate about the intersection of human and machines. Self-motivated researcher with extensive experience in agile, indepentent, advanced research and development in Human Computer Interaction, AR/VR, Machine Learning, and Wearables.

CONTACT

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SKILLS

PROGRAMMING LANGUAGES

Java, Javascript, C#, C++, Python, Swift

AR/VR

ARkit, Vuforia, Unity, WebGL, Three.js

BACKEND

Node.js, JSP/JSF, AWS, Google Cloud

DATABASES

MongoDB, SQL, Firebase, PostgreSQL

MOBILE

Native Android, Native IOS, Unity

IDE

Android Studio, WebStorm, Eclipse, Xcode, Unity, Visual Studio

VERSION CONTROL

Git, SVN, Piper

AWARDS

NSF FELLOWSHIP

GEM FELLOWSHIP

ML LEARNING FELLOW

MICROSOFT MIXED REALITY DESIGN CHALLENGE

SANO FOUNDATION FELLOWSHIP

BEST PRESENTATION IAP

BEST PROJECT OPEN CAPSTONE

EDUCATION

MASTER IN MEDIA ARTS AND SCIENCES | MIT Media Lab | 2018 | GPA 5.0/5.0
BS IN COMPUTER ENGINEERING | UPR Mayaguez | 2016 | GPA 4.0/4.0

PROFESSIONAL EXPERIENCE

SENIOR INNOVATION ENGINEER *PTC | Reality Lab | 07/2018 – Present*
Researching the future of Augmented Reality in the industrial manufacturing space within the office of the CTO. Responsible for independently generating novel ideas and building them from the ground up into high quality proof of concepts that influence PTC products.

- Created a Node.js framework that leverages AR for additive manufacturing, allowing in-situ "what you see is what you get" editing on 3D printers.
- Spearheaded the implementation of a conversational agent for AR capable of parsing meaningful spatial cues to control industrial machinery.
- Patented a new interaction paradigm for mobile cross-domain interaction.
- Designed and developed an AR Origami experience using Unity and Vuforia.
- Designed and developed an ARkit speech translation application on iOS/Xcode.

RESEARCH ASSISTANT *MIT Media Lab | Fluid Interfaces | 09/2016 – 05/2018*
Researched the use of augmented and virtual reality to enable just-in-time and embodied learning experiences.

- Researched the use of HTC Vive to create full embodiment illusions.
- Implemented two Unity experiences that leveraged body motion to enable kinesthetic language learning in VR.
- Designed and executed multiple user studies with over 100 participants to asses the impact of VR embodied learning on language.
- Designed a serendipitous language learning framework and implemented two applications on the Microsoft Hololens as proof of concepts.
- Developed two Google Glass applications to research extended memory.

SOFTWARE ENGINEER *MIT Lincoln Labs | 05/2013 – 08/2013 & 05/2016 –* 08/2016
Independently researched novel approaches to perform information extraction in low resource languages to enhance situational awareness during disaster response. Also developed language and speaker recognition systems for Android.

- Shipped two prototypes to sponsors as products.
- Designed and implemented rule based, supervised, and unsupervised learning algorithms to extract information in creole.
- Designed methodologies presented at summit for DARPA program.

SOFTWARE ENGINEER Google | Google Research | 05/ 2015 – 08/2015
Designed and implemented a new communication protocol for distributed IoT sensornet telemetry collection using Bluetooth Low Energy.

- Contributed to the design and implementation of new BLE communication protocol specification on Android peripherals.
- Created extendable Google App Engine Service with Cloud SQL storage.
- Built extendable Android app to measure timing and energy consumption of end-to-end BLE communication with peripheral devices.

PUBLICATIONS

AIR: Augmented Intersection of Realities SIGGRAPH '19
"My Doll Says it's OK": A Study of Children's Conformity to a Talking Doll IDC '18
Words in Motion: Kinesthetic Language Learning in Virtual Reality ICALT '18
Serendipitous Language Learning in Mixed Reality ICALT '17
I-Vector Speaker and Language Recognition System on Android IEEE HPEC '17
TakeTwo: Using Google Glass for Augmented Memory CHI '16
TagAlong: Informal Learning from a Remote Companion CELDA '15