

# Carlos Toxtli

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## Education

### **West Virginia University (WVU)**

2015 - present Research Visiting Scholar

### **International University Center (CUIN)**

2015 Professor

### **Monterrey Institute of Technology and Higher Education (ITESM)**

2013 - 2014 Masters in Innovation and Technological Entrepreneurship

### **IEDE Business School**

2012 - 2013 Master of Business Administration

### **Valle de Mexico University (UVM)**

2009 - 2012 BS in Computer Systems Management

### **National Autonomous University of Mexico (UNAM)**

2003 - 2009 BS in Computer Engineering

## Professional Experience

### **Google**

2015 - present

- **Technical Solutions Specialist**

- **Main Responsibilities:** The design and development of tools to improve education in all public elementary schools, middle schools, and high schools in Mexico, especially focused on CS curriculum, and have full coordination with the federal government.
- **Main Achievements:**
  - The design and development of “Drive Sync” tool, this tool synchronizes the content of over 2 million tablets that were given to children of the 5th and 6th grades at the national level.
  - The design of an Android development curricula and training for all high school professors at the national level (around 150k CS students).
  - Design of a programming curricula for all elementary schools at the national level using Scratch (starting pilot with over a million children).
  - Research paper “Quantifying the Economic Value of Tablets for K–12 Education”.

### **Shoe Lovers**

2015

- **Bot developer**

- **Main Responsibilities:** The design and development of bots and analytic tools for the biggest LATAM women facebook fan page in the world (~37M women). Analysis of 0.8 billion people profiles.
- **Main Achievements:**
  - The usage of bots that contact women and ask through direct facebook messaging about shoes preferences.
  - Some data science techniques applied to the fan page.

## HolaGus

2015

- **CTO**
  - **Main Responsibilities:** The design and development of all the AI behind one of the biggest online personal assistants in Mexico.
  - **Main Achievements:**
    - Design and development of an administration dashboard in which users, bots and operators can interact and coexist.
    - Implementation of AI in chatbots to take orders of common automatable tasks like flights, reservations and food delivery.

## Google

2014 - 2015

- **Technical Program Manager Apps Development** - Google for Education - Emerging Markets (01/14 - 06/15)
  - **Main Responsibilities:** Design and develop fully functional and customizable software integration solutions that allow schools to use Google products and technologies to improve teaching, learning, and administration, helping students to solve their educational needs. Evaluate networking and software projects proposed by universities and partners, providing advice on the best way to design cloud-ready solutions for all community members.
  - **Main Achievements:**
    - Products developed
      - Followed the entire product life cycle (proposal, technical design, development, reviewing and publishing) of "Account provisioning for Google Apps" API and it is published in Google's official github.
      - Developed Groups Generator for Schools Add-On, a tool that creates users, groups, calendars, shared folders, sites, circles and org unit in bulk using a CSV file. Developed using Apps Script.
      - Developed multiple integration snippets using Google Apps Script to solve common Education use cases.
    - Content generation: Published the Google plugins in Moodle official site and created the content of the section "Systems Integration" in Google for Work Connect platform.
    - Integration: More than 100k users provisioned in schools of Africa and America.
    - Public speaking: More than 10 public talks/webinars on behalf of Google.

## ComproPago

2013 - 2014 Co-Founder CIO

Product development.

- Technical leadership.
- Funding raising.
- The biggest cash payment solution in Mexico with a network of 130K points of payment.

## United Nations

2011 - 2013 Webmaster

Content management for UNESCO, UNICEF and UNDP agencies.

- Information gathering system.
- Digital communication strategy.
- Developed a program and system to promote reading which was implemented with the government for all of Mexico's high school schools and impacted over 3 million students

## Aztek Technologies

2006 - 2011 Co-Founder CTO

Business Administration.

- Technical leadership.
- Project Management.
- One of the biggest project was a welfare system that was developed for the government and ran on over 10K mobile devices and benefitted close to 23 million people.

## **Grupo inmobiliario**

2005 CTO

Network management.

- Website development.
- Servers administration.
- The datacenter was started from scratch and the uptime was 99%.

## **Universidad Anáhuac.**

2002 - 2005 System Administrator

Database administrator.

- Technical support.
- Web developer.
- Interconnection of 300 institutions and system integration between them.

## **Tutor for Computer Science and Engineering**

2000 - 2011

Multimedia software.

- Programming tools.
- Productivity Tools.
- 11 years as a CS teacher covering over 15 different topics with over 30 particular clients and over 200 students.

## **Publications**

### **Visualizing Targeted Online Audiences.**

Saiph Savage, Angus Forbes, **Carlos Toxtli**, Grant McKenzie, Shloka Desai, Tobias Hollerer.

COOP: Conference on the Design of Cooperative Systems 2014: Springer.

### **BotViz: Data Visualizations for Collaborations With Bots and Volunteers**

**Carlos Toxtli**, Claudia Flores-Saviaga, Flor Aguilar, Alejandra Monroy, William Dai, Juan Pablo Flores, Nedda Amini, Jeerel Herrejon, Shloka Desai, Norma Elva Chavez, Saiph Savage

CSCW: ACM Conference on Computer-Supported Cooperative Work, posters 2016.

### **Daemo: A Self- Governed Crowd Marketplace**

Stanford Crowd Research Collective, Saiph Savage, **Carlos Toxtli**, Michael Bernstein.

UIST: ACM Symposium on User Interface Software and Technology, posters 2015.

### **A Social Crowd-Controlled Orchestra**

Saiph Savage, Norma Elva Chavez, **Carlos Toxtli**, Salvador Medina, David Alvarez, Tobias Hollerer.

CSCW: ACM Conference on Computer-Supported Cooperative Work, posters, 2013.

### **Nintendo Wiimote for Arm and Wrist Therapy in Stroke Survivors with Upper Extremity Hemiparesis**

Ron S. Leder, Gil Azcarate, Rodrigo Savage, Saiph Savage, L. Enrique Sucar, David Reinkensmeyer, **Carlos Toxtli**, Emilio Roth, Ariel Molina. IEEE Virtual Rehabilitation 2008

## **CiuData: Designing Smart Cities for Conversations between Governments and Citizens**

**Carlos Toxtli**, Saiph Savage  
Campus Party, Zapopan, Mexico, Technical report

## **Work in Progress**

### **“Coordinating Online Bots and Volunteers for Collective Action”**

Carlos Toxtli, Claudia Flores-Saviaga, Saiph Savage,  
UIST: ACM Symposium on User Interface Software and Technology 2016.

### **Daemo: A Crowdsourced Crowdsourcing Platform**

Stanford Crowd Research Collective, Saiph Savage, **Carlos Toxtli**, Michael Bernstein.  
CHI: ACM Conference on Human-Computer Interaction 2016 (submitted).

## **Academic and Professional Projects**

2000 - 2013      More than 100 projects among which are the following:

- ComproPago (Startup,HTML5,Ruby,node.js,Bootstrap)
- Government “Oportunidades” System (Architect, Java Oracle)
- Behavioral Oriented Trading Robot, semantic bot (Startup,Matlab)
- Social Bot (Developer, C#)
- Yellow Pages Bot (Developer, C#)
- Forecasts Melate Bot (Developer, PHP consola)
- SocialQuery Social Capital management (Research,HTML5,Facebook,Linkedin)
- SIE (Parking system) (Architect, AIR)
- Ideanimate (Developer,node.js,MongoDB,isomorphic javascript)
- FitChallenge Social weight loss (Startup,HTML5,Android,iOS)
- 7eleven Augmented Reality Finder (Contest,AR,7Eleven APIs,iOS)
- Parking system that uses telemetry (Developer, PHP con Mysql)
- Tracking System for courier company (Developer, PHP con Mysql)
- Web Based Business intelligence system (Developer, Javascript webservice client)
- System for the control of Influenza for the government (Developer, ASP MSSQL)
- E-Learning platform (Project Manager, Java MSSQL)
- Search Engine Optimization services (Implementer, SEO)
- Electronic billing system (Developer,Java,Spring,Struts,Oracle)
- System for United Nations to encourage reading (Developer,Naciones Unidas,PHP,Abuntool)
- Google Drive Graphic Explorer (Contest,HTML5, Google API)
- YoutubeMaps, NASA Contest (Contest,HTML5,NASA APIs)
- PagaSitio (Developer,HTTP 1.1, PHP)
- MyCurriculum, resumes platform (Startup, HTML5)
- Robotic Contest 2009 (Developer, C para micro controladores)
- Intelligent Being Oriented Programming paradigm (Developer, C )
- Neural networks for room allocation (Developer, Java)
- Categorization of unstructured data (Developer, Machine Learning)
- Plate recognition by vision (Developer,C OpenCV)
- Banking robot, automated bank (Startup,Sikuli,python.java)
- Vulnerability Scan for UNAM (Annalist, WhiteHat)
- Creating audio format for 32 speakers (Inventor, Parallel Computation)
- Experimental 3D Laboratory (Owner,32 speakers 3d audio and 3D video)
- Stereoscopic 3D Videos production (Editor, Blender, Stereoscopic)
- Videogames Xbox 360 and Wii (Developer, XNA DirectX Flash API)
- Easy Context Menu Tools (Developer, C# Windows Shell)

Virtual Hardware Streaming (Developer, C++)  
 Multitouch DJ interface (Contest, Microsoft UIST, .NET)  
 Collection system NEXTEL (Developer, J2ME)  
 Taxis Airport System for the Mexican International Airport (Developer, C# CF)  
 Bus tickets system (Developer, C# Compact Framework)  
 Abuntool (MultiPlatform Generator) (Founder, PHP, Javascript, iOS, Android, Genetic Algorithms)  
 Issuing ticket machine Driver (Developer, Python)  
 Bluetooth bomber (Developer, Python)  
 Biometric security system (Developer, Java)  
 Magnetic cards security system (Developer, Python)  
 System-tone telephone system (Developer, Visual Basic)  
 ToxCore ultraligh linux distribution (Inventor, TinyCore)  
 Gyroscopic file sharing (Contest, HTML5, Synaptics API)  
 Interaculta, NUI cultural system (Startup, Kinect, OpenNI)  
 Router with Linux embedded customization (Developer, Linksys)  
 Mobile database engine (Developer, J2ME)  
 Mysql UDF Serial port controller (Developer, Mysql API)  
 Wan2Tree, non centralized network driver (Developer, Java, Microsoft Pastry)

## **Technical Knowledge**

- Good understanding and development knowledge of most Google technologies, products and platforms.
- Programming languages: Java, Python, C, C++, Go, Javascript, PHP, HTML5, CSS3, SQL, C#, Ruby, ASP, ActionScript, Visual Basic..
- Databases: BigQuery, Postgres, Mysql, SQL Server, DB2, Informix, MongoDB, BigData tools...
- Networking: Wired and wireless network design, configuration and installation, Firewall configuration, Linux firmware development...
- Hardware: Arduino, Microcontrollers, PIC, Wearables, Internet of Things, Robotic...
- Multimedia: Video and Audio tools, 3D video (stereoscopic) and 3D audio, up to 32 speakers.
- Other: Artificial Intelligence, Machine Learning, Quantum Programming, Cognitive Computing, Brain Computer Interfaces programming, Drone programming, 3D sensors programming, Entrepreneurship and innovation techniques.

## **Talks**

2015 More than 50 talks delivered this year among which are the following:  
 TEDx, "Neuropsychopreneurship", Mexico, Monterrey  
 UPQ, "Human 2.0 - The future of human augmentation", Mexico, Queretaro  
 SxSWedu, "Single Sign On overview", Austin, USA, Texas  
 SG, "Sentimental Computing", Mexico, DF  
 Dev.f, "Programming the science fiction", Mexico, DF  
 ITSCH, "Quantum programming", Mexico, Michoacan  
 ITT, "Growth Hacking", Mexico, E.M.  
 Nestle, "The tools of the future", Mexico, DF  
 HackerTalk, "How to innovate using technology", Mexico, DF  
 DeKids, "Programming for kids", Mexico, E.M.  
 IPN, "Google for students", Mexico, DF  
 Hitco, "No emprendo para ver si funciona, porque va a funcionar emprendo", Mexico, Yucatan

2014 More than 20 talks delivered this year among which are the following:  
 COOP 2014, "Visualizing Targeted Audiences", France, Nice  
 QBIT, "Quantum Programming", Mexico, Queretaro

- ITT, "Cognitive Computing", Mexico, E.M.  
 NI04, "Internet of Everything", Virtual Conference  
 SG, "Wearable Devices", Virtual Conference  
 Entrepreneur Week, "Innovation on Entrepreneurship", Mexico, D.F.  
 FLISOL 14, "BigData for beginners", Mexico, Queretaro  
 CECyTEM, "Why study systems?", Mexico, Morelos  
 ITESM, "Introducing to Javascript", Mexico, Monterrey
- 2013    UAEM, "NFC, What is?", Mexico, Morelos  
           GDG, "All the Google APIs", Mexico, Guadalajara  
           ITT, FLISOL 13, "3D Sensors", Mexico E.M  
           IPVT, SS 13, "Drone Programming", Mexico E.M.  
           ITESM, "NFC, What is?", Mexico, Monterrey
- 2012    UIST 2012, "ForcePad web 3D touch", USA, Massachusetts  
           SG, "HTML5 for mobiles", Virtual Conference,  
           ITT, CCT, "HTML5 VS Flash", Mexico E.M  
           UV, "Brain Computer Interface", Mexico, Veracruz
- 2011    ITT, SIME 11, Mexico E.M. • "3D Audio and 3D Video"  
           UIST 2011, USA California • "TouchMouse DJ Interface"  
           ITT, FLISOL 11, Mexico, E.M. "Abuntool"
- 2010    Campus Party , Mexico D.F "Hacking for Something Better"

## **Awards**

National Government, Medal of Excellence EGEL (Awarded to perfect score BS students at national level)  
 Google, Google Apps Developer Challenge, 1st place  
 Facebook, Facebook Developers World Hack, 1st place  
 Intel, Intel Innovation Latin App, 1st place  
 Cisco, Internet of Everything Challenge, 1st place