

## **BIOGRAPHICAL SKETCH**

**Name:** HENRY ALONSO RUIZ GUZMAN  
**Title:** RESEARCH ASSOCIATE / SOFTWARE DEVELOPER  
**Address:** Department of Soil & Crop Sciences, Texas A&M University  
**ORCID:** <https://orcid.org/0000-0001-9114-4293>

### **Research interests:**

Artificial Intelligence, Computer Vision, Machine Learning, Pattern recognition, Images processing, Deep learning, Remote Sensing, Ground Penetrating Radar (GPR), Data Science& High-Performance Computing (HPC), Python, C++

## **A. PROFESSIONAL PREPARATION**

INSTITUTION AND LOCATION	MAJOR	DEGREE	YEAR(s)
UNIAJC, Cali, Colombia	Computer Science	B.S.	2013
Autonomous University of Baja California, Mexicali, Mexico	Artificial Intelligence	M.Sc.	2017

## **B. APOINTMENTS**

1. **Research Associate/Data Scientist**, 09/11/2018 – present, Department of Soil and Crop Sciences, Texas A&M University
2. **Research Assistant/Data Scientist** 02/2017 – 06/2018 – CIAT (International center of tropical agriculture). - computer vision and software development
3. **Research Internship**: 07/2016 – 12/2017, Texas A&M University, Department of Soil and Crop Sciences, Texas A&M University. - computer vision and software development
4. **Research Internship**: 10/2016 – 11/2016, Sugar beet and Bean Research Unit of the U.S. Department of Agriculture, Agriculture Research Service and Michigan State University. - computer vision and software development
5. **CONACYT Fellow**, 07-2015-06-2017, Autonomous University of Baja California, Mexicali, Mexico
6. **Assistant professor**, 01/2014-06/2015, UNIAJC
7. **Senior software Developer**, 02/2011 – 06/2015 – CIAT (International center of tropical agriculture).

## **C. SYNERGISTIC ACTIVITIES**

### **Awards**

1. Master's Degree Fellowship, Mexico, CONACYT
2. Master's Internship Fellowship, Mexico, CONACYT
3. Udacity: Bertelsmann Tech Scholarship, Deep Learning nanodegree
4. Udacity: Intel ® Edge AI Scholarship nanodegree
5. Microsoft Student Partner

6. Microsoft Community Specialist
7. Qualcomm® Artificial Intelligence Contest winner (<https://bit.ly/2RzpHJr>)
8. Qualcomm® Developer of the month (<https://bit.ly/341DOL1>)
9. Meritorious recognition thesis (master's degree) – A Machine learning platform for training, validating and running machine learning models.
10. Meritorious recognition thesis (B.A. degree) - Virtual Interpreter for synchronous communication for oral and auditory disabled people
11. Meritorious recognition thesis (congress) - Development of video game to facilitate the understanding of the students in programming.
12. Best oral presentation Award, International Banana conference, 2020, India for the paper “*AI-powered banana diseases and pest detection*”.

### **Certificates**

- **Microsoft**
  - Microsoft certified Professional
  - Microsoft Certified Technology Specialist in Programming in HTML5 with JavaScript and CSS3
  - Microsoft Certified Technology Specialist in Microsoft SharePoint 2010, Application Development
- **Coursera**
  - TensorFlow in Practice Specialization
  - Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning
  - Convolutional Neural Networks in TensorFlow
  - Natural Language Processing in TensorFlow
  - Sequences, Time Series and Prediction
- **Udacity**
  - Deep Learning Nanodegree
  - Intel® Edge AI for IoT Developers Nanodegree

### **Teaching**

1. Software programming (3 semester of engineering)
2. Programming of mobile devices with Android (2 semester of engineering)
3. Programming of web applications (1 semester of engineering)

### **Open Source**

- CV-Studio. Git code (2019). <https://github.com/haruiz/CvStudio>
- FalconCV. Git code (2020). <https://github.com/haruiz/FalconCV>
- Riggingjs. Git Code (2020). <https://github.com/haruiz/RiggingJs>

## D. PRODUCTS

### Selected Publications

1. Michael Gomez Selvaraj, Manuel Valderrama, Diego Guzman, Milton Valencia, Henry Ruiz, Animesh Acherjee. **Machine learning for high-throughput field phenotyping and image processing provides insight into the association of above and below-ground traits in cassava (*Manihot esculenta* Crantz).** Plant methods. <https://DOI:10.21203/rs.2.24148/v1> (Accepted)
2. Selvaraj, M.G., Vergara, A., Ruiz, H. et al. **AI-powered banana diseases and pest detection.** Plant Methods 15, 92 (2019). <https://doi.org/10.1186/s13007-019-0475-z>
3. H. A. R. Guzman, F. F. González-Navarro, M. Selvaraj-Gomez, M. Valencia and A. Delgado, "Field Phenomics: **A Web Based Image Analysis Platform Using Open Source Tools**," *2015 International Conference on Computational Science and Computational Intelligence (CSCI)*, Las Vegas, NV, 2015, pp. 851-852.
4. Henry Ruiz, William Díaz, Jaime Alberto Parra Plaza. "Revista de Investigaciones - Universidad del Quindío", **Sign Language Interpreter for hearing impaired communication using image processing**, <https://bit.ly/2RxzvUa>
5. Prakash, Edmond C., Rao, Madhusudan. **Transforming Learning and IT Management Through Gamification**, <https://doi.org/10.1007/978-3-319-18699-3>, As collaborator.