

# Ricardo Gonzalez Penuela

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## Education

2015.1–2019.12 **B. Eng. in Systems and Computer Engineering**, *Department of Systems and Computer Engineering, Universidad de Los Andes, Bogota, Colombia*.

## Research Job Experience

2019.5–2019.8 **Research Assistant Intern at Cornell Tech at the Enhancing Ability Lab (**Accessibility**)** with Assistant Professor [Shiri Azenkot](#), under the program SURF “Summer Undergraduate Research Fellowship”

Developed a pipeline for teachers of the visually impaired (TVI) to design and use interactive 3d models to teach visually impaired students

Redesigned and improved a modelling plugin, [Markit](#), for TVI's to annotate models. In Blender, 3d modelling software, through Python scripting

Designed, developed and deployed a website (including front end and back end) to host the models through AWS

Modified [Talkit](#), the iOS application, to be compatible with the pipeline. This means making possible to download inside Talkit the models hosted in the website

2019.8–Present **Research Assistant Volunteer at Cornell Tech at the Enhancing Ability Lab (**Accessibility**)** with Assistant Professor [Shiri Azenkot](#)

Continuing to work on the deployment of the 3D interactive models pipeline to make it usable by the public

Presented **Molder** demo at **ASSETS '19** on behalf of Professor [Shiri](#) and [Lei Shi](#), see more in the Research Work section

2019.2–Present **Research Assistant at Universidad de Los Andes, group IMAGINE, with Associate Professor [Jose Tiberio Hernandez](#)**

Develop an **educational platform** to **innovate** the way students' access and study Radiographies in the Radiology discipline:

Designed and developed a prototype of a web-solution in which Radiology students can **study** and **explore “data samples”** of subjects of interest through **data visualizations**. Students can also explore in depth Radiographies, using a Radiography Web-viewer. Paper in progress.

**Obtained 60.000.000 Colombian pesos grant** to develop a full-fledged version of the platform and implement it at the Hospital Militar Central (Colombia, Bogota)

Collaborating with a group of doctors and Radiology students at the Hospital Militar Central working inside the research department of the Hospital

2018.8–2019.1 **Research Assistant Volunteer at Universidad de Los Andes** with Assistant Professor [John Guerra-Gomez](#)

Developed a system, Tactiled, in which we make tactile graphics more available through machine learning and crowdsourcing

Worked on the architecture of the Machine Learning model that classifies whether images can be transformed into a reliable tactile version of the image or not

Worked on the web application design and development. This system is hosted on google cloud platform and managed through cloud functions

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## Research Work and Publications

Present **Molder**: Paper in submission, **Co-author**, **CHI2020**

Molder is an accessible design tool for interactive tactile maps, an important type of printed materials that can help students learn O&M skills. Molder provides a simplified design process and easy-to-learn functions. A designer uses Molder to design a map using tangible input techniques and accessible feedback. Molder contributes an interaction paradigm towards accessible modeling.

2019.10 **Tactiled**: Poster in **ASSETS '19** (%58 acceptance)

**Gonzalez, R.**, Gonzalez, C., & Guerra-Gomez, J. A. (2019). Tactiled. The 21st International ACM SIGACCESS Conference on Computers and Accessibility - ASSETS '19. Presented at the The 21st International ACM SIGACCESS Conference.

2019.8 **Markit**

Lei Shi, & **Ricardo Enrique Gonzalez Penuela**. (2019, November 2). rgonzalezp/Markit: Markit V1.0 (Version V1.0). Zenodo. <http://doi.org/10.5281/zenodo.3526177>

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## Industry Job Experience

2018.1–  
2018.6 **Developer/Test Automation intern** at **Endava**, a British based software development company

*Developed new modules for a test accelerator, a framework used by the company to create testing suites for new software products*

*Automated UI tests for social media platforms*

**Key Technologies:** Java, Selenium, Cucumber, Serenity, Postman, Git, DB2, Jenkins, AWS, Maven, Jira and JMeter

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## Teaching Job Experience

Spring 2019 Teacher assistant: **Programming with web technologies**, Senior year course, fundamental to learn how to use web development tools and students need to use all previous courses knowledge to develop multiple full stack solutions. **Universidad de Los Andes**

*Worked with Assistant Professor Jose Bocanegra to develop the course material*

Spring 2016, Teacher assistant: **Object oriented programming II**, Freshman year course, students  
Fall 2016 learn recursive programming, sorting algorithms and other fundamentals of programming. **Universidad de Los Andes**

*Aided the Professor to grade the students exams, homework and supported in the teaching/lab sessions*

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## Awards and Media

**Media**

2019.6 Note on **Assistive Technologies** work in **El Espectador** newspaper: "[Colombian engineers develop tools to help blind people](#)"

**Award**

2017.10 **2nd place** in the **II security marathon**: Inter-university competition with security problems like CTF 365 held at the **Universidad de Los Andes**. Challenges related to: Networking, stenography, cryptography, reverse engineering. "[II security marathon](#)"

**Award**

2015.5 **Best** undergraduate **freshman project** in the Department of Systems and Computer Engineering in the competition of ExpoAndes, **Universidad de Los Andes**, **Ranking 1/15**

## Leadership and Volunteering

**Leadership**

2017.6–  
2018.2 **Co-Founder of the Ciicep**, "Center of investigation, innovation and creation for undergrad students", **Universidad de Los Andes**

Alternative way to finance the university through **research and industry projects**

Negotiated an annual budget provided by the rector of the **Universidad de Los Andes** of **50.000.000 Colombian pesos** to pay a salary to prominent students working inside the Ciicep and also fund the operation

**Leadership**

2017.4–  
2018.1 **Member of the directors' board ACM**, in local students' group at **Universidad de Los Andes**

Organized local group activities, small videogame and programming events and assisted inter-university meetings

**Leadership**

2016.12–  
2017.12 **Student Representative** of the Department of Systems and Computer Engineering, **Universidad de Los Andes**

Chosen, through a **democratic election**, as representative of a department with a population of over **1000 students**

**Social Work**

2015.2–  
2018.1 Foundation of emotional intelligence MAZAL, helping drug addicts overcome their emotional conflicts

## Skills and Technical Abilities

Programming SWIFT, JAVASCRIPT, PYTHON, JAVA AND PROCESSING

3D Modelling BLENDER

Web Dev REACT, NODEJS, HTML5, CSS ANGULAR, TENSORFLOWJS AND VEGA-LITE

Prototyping and design SKETCH, ILLUSTRATOR, AND PHOTOSHOP

3rd party services AMAZON RECOGNITION, GOOGLE CLOUD, FIREBASE DB AND AUTHENTICATION

Protocols and APIs REST, JSON AND XML

Databases	AWS SERVICES, MONGODB, POSTGRESQL, DB2IBM AND MYSQL
User Research	SURVEYS AND QUANTITATIVE ANALYSIS
Languages	NATIVE SPANISH AND FLUID ENGLISH WITH HIGH PROFICIENCY (107 TOEFL)