

# Antonio Rueda-Toicen

SOFTWARE ENGINEER · (DATA) SCIENTIST

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*“A system of cells interlinked within one stem...”*

## Experience

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### Thinkful

New York City, USA

INSTRUCTOR FOR THE DATA SCIENCE BOOTCAMP

May 2018 - current

- Individual mentoring on statistics, databases, experimental design, A/B testing, data visualization, and machine learning
- Interviewing of candidates and capstone project grading
- 85% of students are hired as data scientists within 6 months of completing the program
- Tools taught: Python, SQL, Jupyter, pandas, numpy, matplotlib, seaborn, TensorFlow, deep learning

### The Chain

Caracas, Venezuela

CHIEF TECHNOLOGY OFFICER | LEAD ENGINEER

December 2017 - current

- Led the development of four software projects on blockchain and artificial intelligence: Coinet, Airmed, Surgflow, Plastico
- Management of fifteen software engineers
- Requirements engineering, full stack software development, QA, and tech stack: NodeJS, React, Hyperledger, Stellar, Ethereum, IPFS
- <http://thechain.tech/>

### Datacamp

New York City, USA

COURSE DEVELOPER AND MAIN INSTRUCTOR: IMAGE SEGMENTATION WITH PYTHON

October 2018 - current

- Authoring of content (video lectures, course content and coding assignments) for the Image Segmentation with Python course for Datacamp (1M userbase), to be published in April 2019.

### National Institute of Bioengineering, Central University of Venezuela

Caracas, Venezuela

INSTRUCTOR AND RESEARCHER

April 2017 - October 2018

- Instructor at the Center of Medical Visualization, courses taught: “Applications of fractal geometry to biomedicine” and “Software development for scientists and engineers”
- Research in biomedical computer vision focused in the segmentation and characterization of brain tumors in MRI, see Google Scholar link for related publications.
- Research on cellular automata, complex networks, information theory, and fractal geometry
- Supervision of biology and computer science thesis projects.

### Udacity

Mountain View, California

MENTOR AND PROJECT REVIEWER: DATA ANALYSIS NANODEGREE

Dec 2017 - May 2018

- Mentoring and project review for the Data Analyst Nanodegree at Udacity
- One on one coaching directed to students learning statistics, Python, R, SQL and Tableau

### Yttrium Technology LLC

Sunrise, Florida

LEAD SOFTWARE ENGINEER

October 2013 - May 2014

- Development of DICOM PACS solution for the storage and transmission of clinical medical image data
- Tools used: C#, Java, XNAT Server, DICOM

## Languages

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**Human-to-human** English (fluent, C2 level, TOEFL IBT score  $\frac{107}{120}$ , Spanish (native)

**Human-to-computer** Python, R, SQL, C, C++, Matlab, CUDA, Javascript, HTML, CSS

## Education

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### Central University of Venezuela

MASTER'S DEGREE IN BIOENGINEERING

*Caracas, Venezuela*

*Jan. 2014 - April 2017*

- Biomedical computer vision programme.
- Thesis: Classification of brain tumors in multimodal MRI with network automata
- Advisor: Miguel Martín-Landrove

### Central University of Venezuela

LICENTIATE DEGREE IN COMPUTER SCIENCE

*Caracas, Venezuela*

*Mar. 2007 - Oct. 2013*

- Specialization in Computer Graphics.
- Thesis: Segmentation of brain tumors in multichannel MRI with GPU-parallelized cellular automata
- Advisors: Miguel Martín-Landrove and Rhadamés Carmona

## Selected Publications

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### Tumor Growth in the Brain: Complexity and Fractality

*Springer Series in Computational  
Neuroscience*

BOOK CHAPTER IN "THE FRACTAL GEOMETRY OF THE BRAIN": MIGUEL MARTÍN-LANDROVE, ANTONIO BRÚ, ANTONIO RUEDA-TOICEN, & FRANCISCO TORRES-HOYOS  
available online

2016

### Evolution Rules of Deterministic Cellular Automata for Multichannel Segmentation of Brain Tumors in MRI

*Proceedings of CIMENICS XII*

CONFERENCE ARTICLE: ANTONIO RUEDA-TOICEN, RHADAMÉS CARMONA, MIGUEL MARTÍN-LANDROVE, & WUILIAN TORRES

2014

available online, with code repository on GitHub

### Search of Complex Binary Cellular Automata with Behavioral Metrics

*Complex Systems, Vol 24, No. 1*

JOURNAL ARTICLE: JUAN C. LÓPEZ-GONZÁLEZ & ANTONIO RUEDA-TOICEN

2015

available online, app available at: [cellular-automata.com/discoverer](http://cellular-automata.com/discoverer)