Antonio **Rueda-Toicen**

SOFTWARE ENGINEER · (DATA) SCIENTIST

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"A system of cells interlinked within one stem... "

Experience

HomeToGo GmbH　　　　　　　　　　　　　　　　　　　　　　　*Berlin, Germany*

DATA SCIENTIST　　　　　　　　　　　　　　　　　　　　　　　*March 2019 - current*

- Development of algorithmic image understanding methods: similarity evaluation and classification
- Tools used: Python, PyTorch, Google BigQuery

The Chain　　　　　　　　　　　　　　　　　　　　　　　*Caracas, Venezuela*

CHIEF TECHNOLOGY OFFICER | LEAD ENGINEER | FOUNDER　　　　　　　*December 2017 - current*

- Management of fifteen developers working on four software projects on blockchain and artificial intelligence: Coinet, Airmed, Surgflow, Plastico
- Full stack software development and QA, tech stack: NodeJS, React, Hyperledger, Stellar, Ethereum, IPFS
- Translation of business needs into technical requirements
- http://thechain.tech/

Thinkful　　　　　　　　　　　　　　　　　　　　　　　*New York City, USA*

TECHNICAL EXPERT AND MENTOR FOR THE DATA SCIENCE BOOTCAMP　　　*May 2018 - current*

- Mentor of the data science bootcamp
- Individual mentoring on statistics, databases, experimental design, A/B testing, data visualization, and machine learning
- Mock interviewing of candidates and capstone project grading
- Tools used and taught: Python, SQL, Jupyter, pandas, NumPy, matplotlib, seaborn, PyTorch, deep learning

Algorithmic Dynamics Lab, Center for Molecular Medicine, Karolinska Institute　　*Stockholm, Sweden*

RESEARCH PROGRAMMER　　　　　　　　　　　　　　　　　　*January 2015 - September 2018*

- Development of software to provide numerical estimations of Kolmogorov complexity and empirical study of the properties of Turing machines, cellular automata, and complex networks
- Development of the Online Algorithmic Complexity Calculator and Minimal Information Loss for Data Dimensionality Reduction
www.complexitycalculator.com
www.complexitycalculator.com/MILS
- Development of the Layered-BDM grayscale image and weighted network descriptor
- Tools used: R, Shiny, Python, HTML5 + CSS3, Javascript, Wolfram Language
- www.algorithmicdynamics.net

National Institute of Bioengineering, Central University of Venezuela　　*Caracas, Venezuela*

INSTRUCTOR AND RESEARCHER　　　　　　　　　　　　　　　*April 2017 - November 2018*

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

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

Lead Software Engineer

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Sunrise, Florida

October 2013 - May 2014

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

Languages

Human-to-human   English (fluent, C2 level, TOEFL IBT score 107120), Spanish (native)

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

Education

Central University of Venezuela

Master's degree in Bioengineering

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Caracas, Venezuela

Jan. 2014 - April 2017

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- 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

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Caracas, Venezuela

Mar. 2007 - Oct. 2013

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- 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

Tumor Growth in the Brain: Complexity and Fractality

Book chapter in "The Fractal Geometry of the Brain": Miguel Martín-Landrove, Antonio Brú, Antonio Rueda-Toicen, & Francisco Torres-Hoyos

available online

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Springer Series in Computational Neuroscience

2016

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

Conference article: Antonio Rueda-Toicen, Rhadamés Carmona, Miguel Martín-Landrove, & Wuilian Torres

available online, with code repository on GitHub

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Proceedings of CIMENICS XII

2014

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Search of Complex Binary Cellular Automata with Behavioral Metrics

Journal article: Juan C. López-González & Antonio Rueda-Toicen

available online, app available at: cellular-automata.com/discoverer

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Complex Systems, Vol 24, No. 1

2015

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