Antonio Rueda-Toicen

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Education

- **Universidad Central de Venezuela** — Caracas, Venezuela
  Master of Science in Bioengineering — *2014-2017*
- **Universidad Central de Venezuela** — Caracas, Venezuela
  Licentiate Degree in Computer Science — *2007-2013*

Experience

- **Data Science Retreat** — Berlin, Germany
  Data Science Mentor & Teacher — *April 2020 - present*
  - **Education and Mentorship**: Taught over 180 students, resulting in positive student outcomes and successful transitions into data science roles by students from academia and other technical backgrounds. Taught courses on Computer Vision (both for DSR students and software engineers from Volkswagen's CARIAD), Neural Networks and Deep Learning with PyTorch, Graph Machine Learning, Fundamentals of Machine Learning, Time Series Analysis, and SQL.
- **Vinted GmbH** — Berlin, Germany
  Senior Machine Learning Engineer — Senior Data Scientist — *August 2021 - August 2023*
  - **Delivery Time Estimation**: Reduced "delayed arrival" customer support tickets by 16%, verified through A/B testing. Achieved by developing, deploying, and scaling delivery time estimation models handling 20 million transactions per month.
  - **Overflow Detector**: Deployed a LightGBM regression model to estimate occupancy of the locker's network, reducing Mean Absolute Error from the previously deployed model by 5x.
  - **Mentorship and Teaching**: Mentored a data science intern during summer 2022. The mentorship led to a full hire in the Data Privacy Team. Prepared and delivered workshop of "Bayesian Regression with NumPyro" for the Data and Analytics Guild.
- **Parkling GmbH** — Berlin, Germany
  Senior Data Scientist — *January 2021 - July 2021*
  - **Driver Route Optimization**: Optimized and maintained code for route-generation algorithms and produced sampling routes for available parking spots in over 30 European cities, improving driving efficiency by 1.3%.
- **Neuraltrain GmbH** — Berlin, Germany
  Senior Data Scientist — Image Database Team Lead — *June 2020 - November 2020*
  - **Image Recommendation System**: Created a recommendation system for clinical trials on depression patients using a database of 30k images, leading the database team in collection and definition of methodology for recommendations combining patient profile from OCEAN model + PHQ-8 and stimuli.
- **HomeToGo GmbH** — Berlin, Germany
  Data Scientist — *March 2019 - May 2020*
  - **Inventory Understanding through Image Classification and Object Detection**: Boosted conversions by 12% by enabling image understanding of vacation rentals. Developed and deployed image classification and object detection algorithms on an inventory of 500 million images on Google Cloud Platform for this purpose.
  - **De-duplication of Search Results**: Eliminated duplicate search results by using image embeddings from a convolutional neural network. Prepared image dataset on Mechanical Turk to benchmark results, showing 96.5% f1-score at detecting duplicates due to crop and zoom.
  - **Image Beautification and Quality Assessment**: Increased engagement with vacation rental offers by selecting high quality images and applying a GAN to "beautify" selected images of facades. Results showed positive outcomes on facades with 1.2% increase on click-through rate.
  - **Mentorship**: Mentored a junior data scientist in the topic of computer vision.

- **Thinkful** New York City (Remote)
  Data Science Mentor and Content Developer *May 2018 - July 2021*
  - **One-on-One Mentoring**: Mentored ten students through Thinkful's Data Science Program, guiding them through the creation of their portfolios and capstone projects.
  - **Candidate Assessment**: Conducted over one hundred interviews (oral exams) for assessing graduation candidates of the data science program.
  - **Curriculum Development**: Developed teaching content on classification and regression using gradient boosting algorithms.
- **The Chain** Caracas, Venezuela
  Chief Technology Officer — Founder *December 2017 - March 2019*
  - **Project Management**: Managed fifteen developers across four software projects on blockchain and artificial intelligence, translating business needs into technical requirements and delivering successful projects as CTO.
  - **SurgFlow**: Led the development of SurgFlow, a system to reduce the downtime of surgical rooms, up to 12% by intelligent scheduling and notification.
  - **Open-Source Development**: Led the open-source development of Airmed Foundation, a system to store medical records through IPFS and Hyperledger Fabric, implemented on Node.js.
- **Universidad Central de Venezuela** Caracas, Venezuela
  Instructor and Researcher *November 2016 - December 2018*
  - **Education and Mentorship**: Taught course "Applications of Fractal Geometry to Biomedicine" alongside professor Miguel Martín-Landrove at the National Institute of Bioengineering (INABIO). Supervised a Biology Licentiate Thesis project: "Estudio Comparativo de Conectomas de Nemátodos con Metricas de Complejidad", and a Computer Science Licentiate Thesis Project: "Registros Médicos Permisados y Distribuidos a través de Hyperledger Fabric e InterPlanetary Filesystem".
  - **Co-authoring of scientific publications**: Contributed to the scientific paper "Complexity of brain tumors " (Physica A: Statistical Mechanics and its Applications) and the book chapter: "Tumor Growth in the Brain: Complexity and Fractality" published in Springer's "Fractal Geometry of the Brain".

Algorithmic Dynamics Lab, Karolinska Institute Stockholm, Sweden (Remote)
Research Programmer *October 2014 - December 2017*

- **Open Source - Machine Learning Development**: Developed open-source machine learning software ((the Online Algorithmic Complexity Calculator) available at www.complexity-calculator.com and Image Analysis with Algorithmic Information) to provide numerical estimations of Kolmogorov complexity on images and complex networks, contributing to research and scientific publications with R, Shiny, and Wolfram Mathematica.
- **Co-authoring of Scientific Publications**: Contributed to three journal papers as co-author: "A Decomposition Method for Global Evaluation of Shannon Entropy and Local Estimations of Algorithmic Complexity", "Minimal Algorithmic Information Loss Methods for Dimension Reduction, Feature Selection and Network Sparsification", "A Novel Method for Reconstructing CT Images in Gate/Geant4 with Application in Medical Imaging: A Complexity Analysis Approach".

Volunteering

- **Organizer: Berlin Computer Vision Group**: I host free and practical workshops on computer vision with Python. The group has currently over 700 participants and we have run events both on-site at the Linux Users Group of Berlin and online.

Programming Skills

- **Languages**: Python, SQL, PyTorch, R, Wolfram Mathematica, Matlab, Java, C, CUDA, C++, Javascript, Tex
- **Technologies**: Git, Github, MLFlow, Docker, Kubernetes, Google Cloud Platform, Vertex AI