RodrigoAgundez

PhD

Curriculum Vitae

Contact
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Dutch / Mexican
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Languages
Spanish
English
Dutch
Italian

360°

- **10+** years of coding and software engineering
- **7** years of Machine Learning experience
- **5** years of tech leadership and team management
- **4** year of AWS cloud experience in the ML domain

adidas	2021 - Now	Director / Principal of Data Science & ML
Vodafone-Ziggo	2020 - 2021	Lead Data Scientist
Talpa Network	2019 - 2020	Lead of Artificial Intelligence
GoDataDriven Consulting (7 Projects)	2016 - 2019	Lead of Data (DS & Eng) Lead Data Scientist Senior Data Scientist Data Scientist
Qualogy	2015 - 2016	Data Scientist
FOM	2011 - 2015	Researcher

Hands-on expert on:

- AWS ML stack / SageMaker
- Python software development and PyData stack
- Spark
- Production ready ML systems design for:
  - Recommender systems
  - Forecasting
  - ML team development environment
- Recommender systems
- Forecasting
- Building ML teams

Experience

2021 - Now **adidas** Amsterdam

Director of Data Science and ML

I am currently the Director of Data Science at adidas, responsible for all Trading Sciences global products with focus on our digital channels. My 3 core responsibilities are:

- Set the strategic technical vision for Data Science products, both in terms of performance/added-value and rollout of the products to different markets;
- Highly technical strategic and operational phases of developing a Machine Learning platform for Data Scientists in AWS;
- People manager of 3 teams of internal and external Data Scientists and Machine Learning engineers.

Some extra details:

- Manage contracting and strategy with external partners (e.g. AWS);
- In charge of +1M yearly budget for external capacity;
- Added value impact of +50M;
- Technical involvement, sometimes hands-on to teach and explain technical concepts that the team needs to adapt;
- Start a collaboration with AWS ML Labs for a high-risk / high-reward cutting edge Data Science use case based on graph neural networks;
- Lead the creation of hackathons to solve out-of-the-box business problems;
- Establish DRY principles for code and data.
- Very strong collaboration with the Data Platform team to ensure the adidas platform components address Data Science requirements.

~$ AWS (SageMaker, EMR, EC2, ECS, Athena, Beanstalk, Glue), Spark, PyTorch, Jenkins, IaC Terraform, Docker, Data Wrangler, PyData stack, data catalog.

2020 - 2021 **VodafoneZiggo** Utrecht

Lead Data Scientist

VodafoneZiggo is one of the biggest telecom companies in The Netherlands, it provides internet, mobile and video on demand services. I worked as the Lead Data Scientist for the Advanced Analytics department with 16 people, a combination of Data Scientist and Data Engineers. Some of my accountabilities are:

- Find, assess and kickstart use cases in the company;
- Elevate the WoW of the team with best practices;
- Guide the Cloud Migration to AWS and cloud cost forecasting;
- Assess 3rd party AI partnerships in the company;
- Hiring of internal and external Data Scientists and Engineers;
- Technical roadmap for the team;
- Point of contact for other teams in VodafoneZiggo (e.g. BICC);
- 1 on 1 hands-on development sessions with the team;
- Data acquisition strategy;
- Delivery of technical products;

- Developed the AI environment in the cloud;
- GDPR related procedures to ensure compliance in our use cases;
- Establish DRY principles for code and data.

~$ AI in AWS (EMR, Fargate, EC2, ECS, Beanstalk, etc.), Spark, PyTorch, Tensorflow, AI Roadmap, GitLab CI/CD, IaC, PyData stack, deep learning, 3rd party AI partnerships, Value tracking, Data strategy, AI hiring.

2019 - 2021 **KERAS** open-source

Collaborator/Committer

Keras is one of the most used Deep Learning frameworks and I am a part of the core development team for the keras preprocessing component of the framework. The responsibilities are:

- Participate in the discussions concerning the API.
- Discuss and assess on how to solve issues from the community.
- Solve issues from the community by offering advice or building / coding a solution.
- Review/merge pull requests from contributors.
- Improve the framework by building software features.

~$ Keras, Python, Travis, git, PyData stack, deep learning, unit testing, continuous integration

2019 - 2020 **Talpa Network** Amsterdam

Lead of Artificial Intelligence

One of the biggest media companies in The Netherlands with many brands offering content over radio, television, magazines, Ecommerce, podcasts, video-on-demand, and radio-on-demand. I started and built the AI department in the company. Some of my accountabilities were:

- Hire and built the team using my vast network;
- Built the AI development platform;
- Assess AI partnerships for all brands;
- Point-of-contact for the team;
- Create AI awareness in the company;
- Collaborate daily with the Data and DevOps team to create an end-to-end AI strategy;
- Part of the architecture board;
- GDPR related procedures to ensure compliance in our use cases;

~$ AWS, Spark, JupyterHub, AI Roadmap, Bamboo CI/CD, IaC, PyData stack, 3rd party AI partnerships, AI hiring.

2018 - 2019 **Schiphol Royal Group** via GoDataDriven Amsterdam

Lead Data (via GoDataDriven Consultant)

Schiphol group manages the Schiphol airport in Amsterdam. I was the technical lead of the Data Science and Engineering Lab which consisted of 20 people. Some of my responsibilities were:

- Solve technical impediments hands-on or via discussions.
- Establish best practices in the team, technical and nontechnical.

- Make decisions regarding the team's roadmap.
- Together with the business perform technical assessments.
- Lead technical hiring efforts and interviews.
- Review pull requests sporadically to share knowledge.
- Intervene hands-on in projects whenever is required.
- Coaching sessions to elevate the team's level.
- Technical advice at the beginning and during each project.
- Decisions about the data lake and advanced analytics platform.
- Technical exposure of the team to the organization.

~$ Spark, Azure, Databricks, Python, Keras, Tensorflow, git, Kubernetes, continuous integration, deep learning, time-series

2018 - 2019 **NSPIRE/KPN** via GoDataDriven Amsterdam

Machine Learning Lead (via GoDataDriven Consultant)

NSPIRE is a mobile application available for download which makes recommendations about what to do in your leisure time. I joined the project from the beginning and I was responsible for building the artificial intelligence part of a team of DS. Some of my responsibilities were:

- Advise on decisions about the application and technologies used.
- Work closely with an editorial office to fine-tune the AI system.
- Implement several recommendation models.
- Taking the AI part of the application all the way from development to production.
- Supervise several data scientists during the time of the project.
- Share knowledge and communicate with internal data scientists such that they could take up the project after I leave.

~$ Python, git, PyTorch, embeddings, Recommendation Systems, Deep Learning, Redis, Kubernetes

2017 - 2018 **Unilever** via GoDataDriven Rotterdam

Senior Machine Learning Engineer (via GoDataDriven Consultant)

I worked developing a fuzzy name matching algorithm for entity data of all countries within the Unilever market. Data coming from different sources has been unavoidably duplicated. The goal was to create golden records which will be enriched from all matching ones. This is a known problem since already with 1 million records yields a cartesian product of 10^12 comparisons, which is unfeasible.

I was able to produce a high performance approach which mixed machine learning, distributed computing and highly optimized algorithms, this approach yield a run-time of 1.5hrs for ~10 million records across 50 countries. The algorithm was put in place in production by data engineers.

~$ Spark, Python, C++, Cython, Jupyter, TF-IDF, n-grams, Azure, ssh, git

2017 **KPN** via GoDataDriven Amsterdam

Senior Data Scientist (via GoDataDriven Consultant)

I worked in the commercial analytics department of KPN (Telecom). I had

several roles, I was doing the work of a senior data scientist by giving advice and direction to several projects, at the same time he helped the analytics team build better models. In addition he built a tool where analysts could easily extract insights from the predictions, specially for the predictive drivers of classification models. Such insights are in production and are used to guide marketing campaigns.

~$ R, Python, Javascript, Jupyter, RandomForest, ssh, ForestFloor, git, Teradata, Flask, Gunicorn, Jenkins

2017 **Knab** via GoDataDriven Hoofddorp
Data Scientist / Data Engineer (via GoDataDriven Consultant)
I worked in the insurance department building and productionizing a ranking algorithm. This model matches the best insurances to the customer needs and characteristics. I wrapped the model in an API to make it accessible to a future application in production, this implies continuous integration and automation of ETL processes. As a second project I built and automated ETL and cross-reference process that required encryption due to security measures. Both projects were used to provide a solution in production.

~$ Python, Pandas, Airflow, HDFS, S3, Postgres, ssh, git, Flask, gpg encryption

2017 **NLE** via GoDataDriven Rotterdam
Data Scientist (via GoDataDriven Consultant)
In this project I was responsible for adding a model to an existing Spark pipeline. This model assigns customer conversion probabilities to different price offering strategies. The type of model does not exist in Spark, therefore a customized implementation was built which could integrate seemingly to the already existing SparkML pipeline.

~$ Spark, Python, Pandas, ssh, git, S3, PyMC3, SparkML

2016 - 2017 **Bakkersland** via GoDataDriven Hedel
Data Scientist (via GoDataDriven Consultant)
I worked as the data scientist optimizing an existing shelf-replenisher prediction system for shops across The Netherlands, such a system is used in production to maximize profit and minimize waste. I also developed a customer predictive algorithm to use as an input to improve the shelf-replenisher predictions. In addition I migrated all scheduled jobs to Airflow, and helped build a dashboard to monitor the model performance in production.

~$ Python, Pandas, Airflow, R, dplyr, Shiny, Postgres, ssh, git

2016 - 2019 **Data Science trainer** Amsterdam

I have deliver multiple trainings to data scientists from many different companies, some public, some during events and some in-company. From the feedback my score has always been above 8.5 with 9.5 or 10 in “trainer was knowledgeable”.

Some of these trainings have been:

- Advanced Python for Data Science
- Deep Learning
- Time - series

Some of the companies have been:

- Deloitte
- Schiphol
- ING
- Bol.com
- Albert Heijn
- Ahold Delhaize

2016 - 2019 **GoDataDriven** Amsterdam

Data Maverick

Apart from working with customers I have been involved in the development of the GoDataDriven accelerator training program. I have been the trainer of several topics:

- Deep learning
- Data science with python
- Making things scale,
- Time-series

2016 **Leiden University/Infostrada** Leiden

Data Scientist

I developed a machine learning algorithm on top of a multiplayer Elo ranking system to assess the expected performance of athletes in different sports. The algorithm was capable of calculating probabilities of outcomes in matches, predicting placings in tournaments and identification future sport talents.

~$ R, RStudio, Shiny, dplyr, MySQL

2016 **Project @ Qualogy** Rijswijk

Data Scientist

I worked on the development of a face recognition system in the context of a smart-office. I was the core developer of the machine learning algorithm and also worked on cleaning and preparing the image data. He also contributed to a user interface prototype.

~$ Python, Flask, Pandas, OpenCV, HTML, CSS, git, ssh

2015 - 2016 **Qualogy** Rijswijk
Data Scientist
Most of the time I worked at the client, internally he took the role of presenting what the newly data science department was about to the rest of the company. I also created with two more colleagues a Cloudera Hadoop workshop which was given during a week to IT employees from other departments.

2011 - 2015 **TU Delft, UNSW** Delft, Sydney
Ph.D. Researcher
During my research I worked on studying quantum transport in one-dimensional systems. In particular I used quantum mechanics to produce theoretical calculations of properties of the quantum transport. The main complexity of the study was the strong electron-electron interactions which cannot be treated as a field at this scale but have to be accounted for specifically in the Hamiltonian. By employing a boson approach to the Hamiltonian I was able to produce some approximations and successful results.
A second part of my research was centered on proposing a protocol that could be use as a data bus in a quantum computer. Like a classical computer needs a data bus to communicate between interfaces, a quantum computer could potentially need a quantum data bus to transfer information from on component to another. This research concentrated in proposing a protocol composed of gates manipulations to achieved transport of the superposition state in an adiabatic channel.
Both studies were performed in collaboration with an experimental group in Sydney, with which publications resulted from the studies.

~$ Matlab, Mathematica, ssh, Latex, Linux, Inkscape

Education

2022	MLOps and distributed training workshop	London
2022	2 AWS SageMaker trainings	Virtual
2022	Hogan Assessment	US-virtual
2021	Director Development Experience	US-virtual
2021	AWS ML training	Virtual
2020	Career coach for leadership	Amsterdam
2018	Reinforcement learning	San Francisco
2017	Advanced Python Mastery	David Beazly
2017	Advanced Deep Learning	San Francisco
2016	Cloudera Developer Training for Apache Spark	Cloudera
2016	Deep Learning	Udacity, Google
2016	Cloudera Hadoop	Big Data Fundamentals, Oracle
2015	Machine Learning	Coursera, Andrew Ng
2011-2015	Ph.D. in Theoretical Physics	Delft University of Technology
2010-2011	Master of Science in Nanoscience	Delft University of Technology
2009-2010	Master of Science in Nanotechnology	Katholieke Universiteit Leuven
2004-2008	Bachelor in Physics	UABC

Speaker

2022	adidas Global Tech Summit Talk: End-to-end Machine Learning Environment	Amsterdam, NL
2022	Data Analytics Meetup Talk: Casual Data Science - Dynamic Pricing	Amsterdam, NL
2018	Webmindar with Dataiku Talk: Deep learning use cases	Amsterdam, NL
2018	CIONET Talk: The future of Deep Learning	Amsterdam, NL
2018	Big Data Expo Talk: Deep Learning, the engine of the AI revolution	Utrecht, NL
2018	PyData Meetup Talk: Code breakfast transfer learning	Amsterdam, NL
2018	Spark + AI Summit Talk: Operation Tulip, Deep Learning to automate auction processes	San Francisco, USA
2018	Dutch data science week Tutorial: Deep learning day	Amsterdam, NL
2018	PyData Amsterdam Talk: Hans-on intro to Deep Learning	Amsterdam, NL
2018	PyData Meetup Talk: Code breakfast deep learning edition	Amsterdam, NL
2018	Vrij University of Amsterdam Talk: From PhD to GDD	Amsterdam, NL
2016	Data Science Summit Europe Tutorial: Face Recognition with OpenCV and TensorFlow	Jerusalem, Israel
2016	Seminar Data Science and Sports Talk: Tools for Predicting Sports Outcomes based on Rankings	Delft, NL
2016	PyData Amsterdam Tutorial: Building a live face recognition system	Amsterdam, NL
2015	Physics @FOM Talk: Local Kondo temperatures in atomic chains	Veldhoven, NL

Blog Posts

https://rragundez.io/blog.html

Publications

2017 ~$ **R. R. Agundez**, C. D. Hill, L. C. L. Hollenberg, S. Rogge, M. Blaauboer, Superadiabatic quantum state transfer in spin chains, Phys. Rev. A 95, 012317 (2017) 🔗.

2016 ~$ S. Blok, **R. R. Agundez**, L. A. Maduro, M. Blaauboer, and S. J. Van Der Molen, Inelastic cotunneling with energy-dependent contact transmission , The Journal of Chemical Physics **146**, 092325 (2016) 🔗.

2015 ~$ **R. R. Agundez**, J. Salfi, Sven Rogge and M. Blaauboer, Local Kondo temperatures in atomic chains, Phys. Rev. B: Rapid Comms. 91, 041117(R)(2015) 🔗.

2013 ~$ **R. R. Agundez**, J. Verduijn, Sven Rogge and M. Blaauboer, Magnetic flux tuning of Fano-Kondo interplay in a parallel double quantum dot system, Phys. Rev. B 87, 235407 (2013) 🔗.

2013 ~$ J. Verduijn, **R. R. Agundez**, M. Blaauboer and Sven Rogge, Non-local coupling of two donor-bound electrons, New J. Phys 15, 033020 (2013) 🔗.

Extras

3rd Place - National Physics Olympics in Mexico.
7th Place - National Probability and Statistics contest in Mexico.
1st Place - State Mathematics contest in Baja California, Mexico.