Curriculum Vitae for Max Akira Endo Kokubun

Personal information

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Born:	24.01.1986	Nationality:	Brazilian

Summary

In essence, I am a problem solver who relies on my scientific knowledge and programming skills to tackle difficult industrial problems. I have a PhD in Aerospace Engineering (2011-2014) and before joining Expert Analytics I held two postdoctoral positions in Applied Mathematics (2014-2016 and 2016-2019).

After moving to the industry sector, I worked as a consultant within digitalization for international Oil & Gas companies. By leveraging my knowledge both in multiphase fluid mechanics and programming, I helped them optimize production (anomaly detection algorithms) and automate human tasks (script programming). My experience in academia allows me to provide creative ways to attack difficult industrial problems and for the client is a guarantee of a solid solution. Moreover, I have experience in tackling problems in a timely manner, adjusting to the needs of the customer and thus guaranteeing a timely deliver for the solutions.

I have a large experience in working with multidisciplinary teams and thrive in such environments. I'm considered by my peers as an excellent speaker and someone who is able to communicate well both with technical people and with stakeholders.

Technical skills

Frameworks	Numpy/Scipy, Pandas, GeoPandas, Matplotlib, Keras, scikit-learn
Languages	Matlab, Python, Fortran, Octave
Tools	git, Jupyter Notebook, openFOAM, LaTeX, COMSOL, Mathematica

Education

2011 - 2014	**PhD in Aerospace Engineering**. National Institute for Space Research, Brazil. "Theoretical Study of Diffusion Flames Originated from the Burning of Heavy Liquid Fuels in Low Porosity Media (In-Situ Combustion)"

2009 - 2011	**Master in Aerospace Engineering**. National Institute for Space Research, Brazil. "Analytical Analysis of Liquid Fuel Combustion Established in a Low-Porosity Medium"
2004 - 2008	**Bachelor in Physics**. Federal University of Rio Grande do Sul, Brazil.

Professional experience

2013 – 2014	**Visiting Scholar**. University of Illinois at Urbana-Champaign, USA
2014 – 2016	**Postdoctoral Fellow**. National Institute for Pure and Applied Mathematics, Brazil
2016 – 2019	**Postdoctoral Fellow**. University of Bergen, Norway
2020	**Consultant**. Expert Analytics, Norway

Languages

English	Fluent
Norwegian	Good
Portuguese	Native
Spanish	Good

Personal skills

Analytical thinking	I have a facility in understanding complex problems in an organized matter, breaking it down into smaler, easier to understand pieces.
Communication	I am considered an excellent communicator, specifically when it comes to simplify very technical topics to the broader audience.
Problem solving	My experience in academia allows me to solve difficult technical industry problems in creative and innovative ways.
Team work	I enjoy being part of a team when solving problems. I have experience working within the Agile methodology, thus ensuring an efficient and fast-paced path from design to implementation.

Some interests and hobbies

Personal	Traveling, Hiking, Sports (football, swimming, rollerblading, tennis), Music
Scientific	Machine Learning, Neural Networks, Data Science, Fluid Mechanics, Computational Fluid Dynamics (CFD), Porous media, Enhanced Oil Recovery

Extended descriptions of selected projects

Activity	Automatic Slug Detector
Period	01.2021-03.2021
Role	Data Scientist

Staffing	Team of 2
Volume	100
Description	This project was part of Wintershall DEA's digitalization initiative. I worked with the production optimization team in a use case dedicated to develop an automatic slug detection tool for the offshore production team in the Bragge oilfield. My role as a data scientist was to develop a backend solution that automatic detects anomalous events in Bragge's wells and categorizes them by severity. My backend solution was coupled with a dashboard solution in Grafana for easiness of visualization to the Bragge's team.
Tools	Python, Cognite Data Fusion, git

Activity	Advanced Chalk Influx Advisor (scoping phase)
Period	10.2020-12.2020
Role	Data Scientist
Staffing	Team of 3
Volume	100
Description	This project was part of AkerBP's digitalization program, Eureka, and its goal was to understand and ultimately predict chalk influx events in the Valhall oilfield. My role as a data scientist in the scoping phase of the project was to help designing the foundations for the later development phase. My broad role in the scoping phase lead me to: elaborate a root-cause diagram for chalk influx events, assess the use of proppant transport models as suitable for chalk transport, aid in the design of experimental work to characterize chalk influence on flow characteristics, data analysis of well tests, among others.
Tools	Python, Cognite Data Fusion

Activity	Experimentally-based modelling of colloid transport in multiphase porous media (EPOCH)
Period	2016-2019
Role	Postdoctoral Fellow
Staffing	8 Researchers
Volume	100
Description	This project was funded by Equinor and it aimed at developing mathematical models and numerical solvers for the problem of polymer particles transport in oil-water flow in porous media. The models we developed were based on experimentally-obtained results for enhanced oil recovery.
Tools	openFOAM, Matlab, MRST, COMSOL

Activity	Mathematical modelling and analysis of medium-temperature oxidation (MTO) of multicomponent oil flow in porous media
Period	2014-2016
Role	Postdoctoral Fellow
Staffing	4 Researchers
Volume	100

Description	Development of mathematical models and numerical solvers for the problem of reactive multiphase flow of a multicomponent oil in porous media. This project was part of IMPA's strategy to tackle industry-relevant problems by the use of high-level mathematical and numerical tools. Our theoretical results were compared with experimental results from a collaborative research team at TU Delft.
Tools	Mathematica, COMSOL, Matlab