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 experience in academia. I have a PhD in Aerospace Engineering, from the National Institute for Space Research (INPE, 2014) and before joining Expert Analytics I held two postdoctoral positions: one in Applied Mathematics, at the National Institute for Pure and Applied Mathematics (IMPA, 2014-2016), and one in Chemistry/Applied Mathematics, at the University of Bergen (UiB, 2016-2019). My role in these projects was to develop mathematical models, and its associated numerical solvers, describing experimentally-obtained results. Thus, I have an expertise in understanding real-world problems/data and translating them into a mathematical framework.

I worked in close collaboration with researchers from different backgrounds (physicists, engineers, mathematicians, experimentalist chemists, etc) and international institutions (Norway, Brazil, USA, Netherlands, Sweden, Belgium, UK). Therefore, I have excellent communication skills and can easily connect with both technical and non-technical audiences.

Technical skills

Frameworks	Scipy, Matplotlib, Pandas, Keras, scikit-learn
Languages	Matlab, Python, Fortran, Octave
Tools	openFOAM, COMSOL, Mathematica, FEniCS, gmsh, Latex

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	I like solving real-world problems by analysing them through my scientific background.
Team work	I enjoy being part of a team when solving problems. My experience in research was always guided by collaborative work, absorbing knowledge from more experienced researchers and guiding younger researchers.

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	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