DARIA MUSTAFINA, PhD

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Citizenship: Dutch, Russian

SUMMARY

Research Scientist with 10+ years of strong multidisciplinary experience interpreting and analyzing data, developing mathematical models and simulations, and managing projects in order to drive innovation, reduce cost, and deliver business values.

Key skills include:

- Predictive Modeling
- Python, MATLAB programming
- Project Management
- Mathematical modeling and simulations
- Numerical Methods

EDUCATION

2014 **Postgraduate Diploma in Petroleum Engineering**
Heriot-Watt University, United Kingdom, Distance Learning

2010 **PhD in Applied Mathematics**
Bashkir State University, Ufa, Russia
Thesis: "Control Volume Finite Element Method for Investigation of Non-isothermal Flow Through Porous Media of Complex Geometry"

2008 **MSc in Engineering (Heat and Mass Transfer) with honors**
Bauman Moscow State Technical University, Moscow, Russia

EXPERIENCE

Product Owner
profitpalms.com
Houston, USA
March '20 - August '21

- Managed development and launched web application based on machine learning algorithms for Amazon sellers

Research Petrophysicist
Shell
Rijswijk, The Netherlands
May '13 – Sep '16

- Developed, lab tested, and deployed novel data evaluation methods (based on FFT, filtering, regression analysis) using fiber optics distributed acoustic sensing (DAS) for real time, continuous, and interventionless wellbore surveillance for reservoir development
- Developed flow-induced noise modeling approach for different types of completion to cross-validate the phenomenological interpretation approach
- Developed predictive models (PCA, PLS regression) to interpret DAS multiphase data
- Managed Fiber Optics Shell/PDO (Petroleum Development Oman) strategic alliance
  - Identified assets and wells for the technology deployments and defined the surveillance scope
  - Coordinated 10 fiber optics permanent field installations and DAS/DTS field trials

Engineer/Lead Engineer
Siemens
Erlangen, Germany
Moscow, Russia
Oct '10 – May '13

- Developed coupled electromagnetic/flow simulation workflow to analyze the efficiency of the inductive electro-magnetic heating driven heavy oil recovery method for different reservoirs
- Planned and analyzed the data from three-phase multiphase flow loop experiments to study the technical feasibility of X-ray multiphase flowmeter prototype and provide the technical information for the decision on further project development

Associate Research Scientist
Schlumberger
Moscow, Russia
Jul '08 – Sep '10

- Developed the approach to model flow and contamination transport during sample operation to optimize the design and achieving the robust flow performance and efficient flow focusing of the new generation Modular Dynamics Tester sampling tools
- Simulated heat transfer and fluid flow through the core samples to evaluate the core analysis apparatus and methods
- Performed cross-validation for digital core analysis simulations and validated upscaling procedure
- Developed modeling approach for cold heavy oil production from reservoirs with fractal wormholes

Intern Student, R&D
Schlumberger
Moscow, Russia
Oct '05 – Jun '08

- Performed various fluid and reservoir modeling tasks to support ongoing research projects using Eclipse, CFD and in-house developed codes

Certificates
2020 Crash Course on Python from Google
2021 Python for Machine Learning Engineers from Logikbot

Selected Publications, Patents

1. Mustafina, D. A., et al.. Multivariate interpolation through least square method. *Vestnik PSTU*, 27, 30-48.
2. Paleja, R., Mustafina, D., Park, T., Randell, D., van der Horst, J., & Crickmore, R. (2015, September). Velocity tracking for flow monitoring and production profiling using distributed acoustic sensing. In *SPE Annual Technical Conference and Exhibition*. Society of Petroleum Engineers.
3. Zazovsky, Alexander F., Alexander Skibin, Darya Mustafina, and Jaideva C. Goswami. "Cleanup prediction and monitoring." U.S. Patent 9,121,263, issued September 1, 2015.
4. Koch, A., Sotskiy, S., Mustafina, D., & Danov, V. (2013, June). Mechanism of heavy oil recovery driven by electromagnetic inductive heating. In *SPE Heavy Oil Conference-Canada*. Society of Petroleum Engineers.
5. Van der Horst, Juun, Hans Den Boer, B. Wyker, R. Kusters, D. Mustafina, L. Groen, N. Bulushi et al. "Fiber optic sensing for improved wellbore production surveillance." In *IPTC 2014: International Petroleum Technology Conference*, pp. cp-395. European Association of Geoscientists & Engineers, 2014.
6. Mustafina, D. A., & Skibin, A. P. (2010). Mathematical simulation of measurements of thermal conductivity under conditions of optical scanning of standard core samples. *High Temperature*, *48*(2), 291-294.