

Giorgiy Lutidze

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PROFESSIONAL SUMMARY

Reservoir engineer with a solid background in numerical mathematics and computer science as well as experience in research and industry software development. Motivated and passionate about applied mathematics, particularly in reservoir simulation. Able to work and think independently as well as thrive in a team environment. Capable of learning new skills quickly and open to exploring new ideas. Strong desire for professional and personal development. Seeking a position where I can enhance my skills and knowledge, while making a significant contribution to a unique organization in a dynamic environment.

CORE QUALIFICATIONS

- Strong background in reservoir engineering as well as numerical mathematics and computer science.
- Deep understanding of mathematical physics, numerical methods, and numerical analysis.
- Advanced knowledge on equations of flow and transport in porous media, black-oil, compositional and thermal compositional reservoir simulation models.
- Solid background in software development, including 4 years of experience in C++, 2 years of experience in Javascript and FORTRAN.
- Sophisticated experience in nonlinear solver technologies.
- Excellent written and verbal communication skills.
- Motivated and experienced in working in a team dynamic
- Possess ability to successfully meet deadlines and manage the time and resources properly.

EDUCATION

The University of Tulsa, Tulsa, OK **Dec 2017**

Doctor of Philosophy in Petroleum Engineering. (GPA: 3.6)

Moscow State University, Moscow, Russia **Jun 2013**

Specialist (eq. to Master of Science) in Applied Mathematics and Computer Science. (GPA: 3.5)

RESEARCH EXPERIENCE

The University of Tulsa - Research Assistant **Jan 2014 - present**

Future Reservoir Simulation Systems & Technology research (FURRST) **Advisor: Dr. R. Younis**

- Developing robust and efficient nonlinear solution strategies for complex implicit simulations.
- Analyzed Newton's Method as a numerical integration, and developed a damping strategy (integration stepsize) using ODE discretization-error analysis.
- Implemented the method for thermal, reactive, multicomponent simulation.
- Developed 3d fully-implicit thermal compositional reservoir simulator (based on ADETL framework).
- As a part of coursework taken, developed:
 - Well controls numerical optimization framework.
 - 3D fully-implicit iterative-coupled geomechanics and flow reservoir simulator.
 - Parallel geometric multigrid linear solver.
 - 3D two-phase fully implicit black-oil simulator.
 - 3D cluster well trajectory planning tool.
 - CUDA realization of eigenvalue decomposition of the matrix.

Russian Academy of Sciences - Research Assistant **Sep 2011 - Dec 2013**

Institute of Numerical Mathematics **Advisor: Dr. Y. Vassilevski**

- Developed a simulator that accounts for the flow from arbitrary-shaped multi-lateral wells in general cells using adaptive fine-resolution grids as a part of ExxonMobile Research grant.
- Investigated advanced wellbore models and Peaceman equation extensions for non-rectangular grids and slanted wells.

WORK EXPERIENCE

Emerson, Roxar Services – Research Software Engineering Intern

July 2016 - August 2016

ResView team – Moscow office

- Developed a 2D fractured wellbore flow modeling tool, based on boundary-element method (method of potential), applicable for arbitrary fracture shape and boundary conditions.

Microsoft Technologies Laboratory – Software Engineer

May 2012 - Dec 2013

ChronoZoom - Microsoft Research, Moscow State University, and the University of California at Berkley

- Extended the timescale component and authoring tools within ChronoZoom – an intuitive online tool for visualization of history that uses the concept of zooming along a timeline to express distance to highlight the scope of time.
- Created home page and performed testing and bug fixing of main components.

RAS Institute of Numerical Mathematics - Research engineer

Mar 2013 - Dec 2013

- Contributed to the development of simulation models of filtration and migration of radioactive contamination in groundwater, using adaptive numerical grids.
- Tested the model and developed additional features.

RAS Semenov Chemical Physics Institute - Research engineer

Mar 2011 - Jun 2013

- Developed a 2D thermal advection-diffusion simulator for complex heat transfer problems.

PAPERS AND PUBLICATIONS

“Damping of Newton iterations Using Error-control Step-length Selection”, G. Lutidze, R. Younis, 15-th European Conference on the Mathematics and Oil Recovery (ECMOR XV), Amsterdam, Netherland, August 2016.

“Thermal explosion in the stirring medium”, M.A.Kunakov, B.V.Lidskii, G.N.Lutidze, B.V.Novozhilov, V.S.Posvyanskii, Russian Journal of Physical Chemistry B. Focus on Physics, Moscow, Russia, June 2013.

“Methods of arbitrary shaped well accounting”, Lomonosov readings conference, “Applied mathematics and Cybernetics” chapter, “The department of computational technologies and modeling”, Moscow, May 2013.

“Advanced methods for complex trajectory well accounting in reservoir simulation”, Lomonosov conference, Moscow, May 2013.

“Thermal explosion in the stirring medium”, award in Scientific Conference of the Department of Kinetics and Catalysis, Semenov institute of Chemical Physics, Moscow, April 2012.

SPECIAL SKILLS

Coding: C++, JavaScript, FORTRAN, Matlab, Wolfram Mathematica, Asmx86.

Software: Eclipse, CMG STARS, Pipesim, PVTsim, LaTeX.

Languages: English, Russian, Georgian.