Yu Jiang – ITASCA Minneapolis

Geomechanics Software Engineer

Expertise	Reservoir Engineering, Fracture Characterization, Reservoir Simulation, Geomechanics, Computational Fluid Dynamics (CFD), Finite Element Analysis (FEA), High Performance Computing (HPC), Matrix Preconditioning Methods, Linear Iterative Solvers, Performance Optimization, Message Passing Interface (MPI), OpenMP, CUDA, GPU, Software Development, Machine Learning
Education	Ph.D. (Petroleum Engineering), 2022 Texas A&M University, College Station, Texas, U.S. M.Sc. (Petroleum Engineering), 2017 University of Oklahoma, Norman, Oklahoma, U.S. B.Sc. (Petroleum Engineering), 2015 University of Wyoming, Laramie, Wyoming, U.S.
Professional Affiliations	Member: Society of Petroleum Engineers

Professional Experience

2023 – Present	ITASCA Minneapolis Geomechanics Software Engineer
2022 – 2023	Texas A&M University, Dept. of Engineering, College Station, Texas Research Assistant

Project Experience

Unconventional Reservoir Simulation of Complex Fracture Conditions: Developed a high-performance finite volume multi-physics (coupled THM) multi-component simulation framework for large-scale fractured unconventional porous media multiphase flow.

Unconventional Reservoir Simulation Matrix Preconditioning Methods: Developed a multistage parallel adaptive CPR-AMG type preconditioner and coupled preconditioned Krylov subspace linear solver package for multi-domain ill-conditioned fully implicit Jacobian in unconventional reservoir simulation.

GPU-accelerated Unconventional Reservoir Simulation: Developed a GPU-accelerated simulation framework for black oil and multi-component unconventional reservoir simulation based on MPI-CUDA.

Fractured Unconventional Reservoir Well Design: Applied reservoir simulation and fracture characterization methods for well and hydraulic fracture spacing design to optimize the reservoir production performance for the unconventional shale reservoirs in Permian Basin.

Temperature Transient Analysis for Deepwater Well: Developed a numerical model for analyzing the transient temperature impact on wellbore and surrounding formation caused by deepwater production in the Gulf of Mexico.