

# Oilonomics: Making sense of the impact of hydrocarbon production on socio-economics

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**Abstract**—The development of the oil and gas industry has stimulated local economic growth by creating employment opportunities, attracting migrants, and increasing local business investments. While previous research shows controversial results of the oil and gas industry’s influence on the local society, very few studies concentrated on visualizing the effect of such influences and predicting the trends to serve business, local government, job seekers, and the general public. This study demonstrates correlations between oil/gas production and the socioeconomic variables over time with multiple massive data sets extracted from official websites. Our initial attempt is to visualize such correlations and trends in the state of Colorado. Future studies can be expanded nation-wide.

**Keyword**—Gas Industry, Employment Opportunities, Oil/Gas



Farrukh Hamza is a graduate student at Georgia Institute of Technology, and works as an Engineering Team Lead at Halliburton, a leading oil and gas services company. His interests include petroleum engineering, hydraulic fracturing, data analytics, and machine learning. He is also involved in technology scouting and contributing to the clean-tech ecosystem. Hamza has authored 15+ industry publications and holds 8 patent applications. He holds a bachelor’s degree in mechanical engineering from NED University of Engineering and Technology, and a master’s degree in petroleum engineering from the University of Texas at Austin.



Qian Sun graduated from Georgia Institute of Technology with a Master of Analytics. She has broad research interests in social sciences. During her study in the United States, she had participated in multiple research projects involving smallholder farmers in Uganda, the aging population in China, immigrants from Mexico, and intermate partners of homicide cases in the Great Den ver Area. Recently she finished a CNX project that applied machine learning models to predict treating pressure using hydraulic fracturing and drilling data. She likes practicing yoga and experiencing different cultures.



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