

A project report on
**DEEP LEARNING BASED SEMANTIC SEGMENTATION FOR
IDENTIFICATION OF SALT DEPOSITS FROM SEISMIC IMAGES**

submitted in partial fulfillment of the requirement for the award of
the degree of

Bachelor of Technology in Computer Science and Engineering

By

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CERTIFICATE

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The results embodied in this thesis have not been submitted to any other University or Institute for the award of any degree or diploma.

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DECLARATION

We, *K.Gopi, T.Krishna Sravanthi, G.Srinu, D.Sravanthi*, hereby declare that the project report titled “DEEP LEARNING BASED SEMANTIC SEGMENTATION FOR IDENTIFICATION OF SALT DEPOSITS FROM SEISMIC IMAGES” submitted to JNTUK University College of Engineering Vizianagaram, in partial fulfillment of the requirements for the award of the degree of B.Tech in *COMPUTER SCIENCE AND ENGINEERING* is a record of original and independent research work done by us during the academic year 2018-2019 under the supervision of *Mr.R.D.D.V. SIVARAM* and it has not formed the basis for the award of any Degree/ Diploma/ Associateship/ Fellowship or other similar title to any candidate in any university.

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ABSTRACT

Several areas of Earth with large accumulations of oil and gas also have huge deposits of salt below the surface. But unfortunately, knowing where large salt deposits are precisely is very difficult. Professional seismic imaging still requires expert human interpretation of salt bodies. This leads to very subjective, highly variable renderings. More alarmingly, it leads to potentially dangerous situations for oil and gas company drillers. One the main challenges of seismic imaging is to identify the salt deposits present in the seismic images.

Imaging salt has been a huge topic in the seismic industry, basically since they imaged salt the first time. The Society of Exploration geophysicist alone has over 10,000 publications with the keyword salt. Salt bodies are important for the hydrocarbon industry, as they usually form nice oil traps. So there's a clear motivation to delineate salt bodies in the subsurface.

Therefore, we intend to build an algorithm that automatically and accurately identifies if a subsurface target is salt or not. For this purpose, we use deep learning with tools like Tensorflow and Keras in order to identify the salt deposits.

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