AI-Driven Gas Pipeline Leak Detection System

- Developed ML models for pipeline leak detection using sensor data.
- Trained Random Forest and SVM classifiers on historical pressure/flow data.
- Proposed SCADA integration for real-time alerts and predictive maintenance.

Improving Drilling Efficiency by Minimizing Mud Loss in Various Rock Formations Using AI

- Applied AI to optimize drilling fluid performance and simulate mud loss across various lithologies.
- Evaluated cost-efficiency and environmental impact of AI-driven fluid strategies.
- Provided insights to minimize formation damage and improve drilling efficiency.

RESEARCH

Machine Learning for Reservoir Characterization

- Compared performance of Random Forest, SVM, and Neural Network approaches
- Achieved 12% improvement in prediction accuracy over conventional methods
- Developed a novel hybrid model combining physical models with ML predictions

Utilization of Drilling Fluid to reduce mud loss circulation in the wellbore

- Evaluated drilling fluids to identify effective solutions for reducing mud loss in wellbores.
- Tested loss circulation materials to assess their sealing performance under down-hole conditions.
- Optimized fluid formulations to enhance wellbore stability and minimize economic loss.

CURRENT RESEARCH FOCUS

Revolutionizing Neurological Care: AI-Driven Treatment Optimization and Outcome Prediction.

- Leveraging machine learning and neuroimaging data to build personalized diagnostic and treatment models for neurological disorders.
- Focusing on low-resource clinical environments to ensure equitable access to AI-powered healthcare solutions.
- Aiming to enhance early detection, treatment accuracy, and clinical decision-making using AI in neurology.
- Integrating interdisciplinary insights from neuroscience, AI, and healthcare systems to improve real-world patient outcomes.

COURSES AND CERTIFICATION

Annual Technical Conference and Oil Show (Student Contest Paper)	**November 07- 08, 2023**
Computational Neuroscience (University of Washington-Coursera)	**December 2023- January 2024**
Philosophy and the Sciences: Introduction to the Philosophy of Cognitive Sciences The University of Edinburgh (Coursera)	**November 2023-22 December 2023**
MUET Model United Nations	**March 10-12, 2023**
Indus Hospital Regional Blood Center, Volunteer Member	**February 10, 2022**
SPE Petro-Fiesta (Runner up Petro-Quiz Competition)	**March 15-17, 2022**

TECHNICAL SKILLS

Languages:	Python, C++, MATLAB, HTML, CSS
Frameworks:	Beautiful Soup**,** Tensor Flow, Pandas, NumPy, Scikit-learn, PyTorch, OpenCV, Matplotlib, Seaborn
Tools & Platforms:	Proper,Reveal, Eclipse,MBAL, Juypter Notebooks, VS Code , PyCharm, Git, GitHub,
Concepts:	Deep Learning, NLP , ML, SCADA,OOPs

ACHIEVEMENTS

- Selected for a competitive government internship in Robotics and Automation Systems.
- Developed a predictive maintenance model and NLP system at Vulcan Completion Products, reducing downtime by 25% and improving knowledge retrieval by 40%.
- Runner up in Petro-Quiz Competition 2022 **Muet Szab Khairpur Campus**

RECOMENDATIONS

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