MANDYAM RANGAYYAN PRATHIK PRASAD

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SUMMARY

Data Scientist and Chemical Engineer specializing in real-time data analytics and magnetic ranging optimization for wellbore positioning. Proven track record in developing end-to-end data pipelines and interactive visualization solutions for drilling operations. Demonstrated expertise in signal processing, algorithm optimization, and data aggregation systems, complemented by experience in autonomous drilling systems through Drillbotics competition leadership. Seeking to leverage strong foundations in drilling automation and data science to advance the field of autonomous drilling systems through applications of artificial intelligence and reinforcement learning.

INDUSTRY EXPERIENCE

Eavor Technologies, Calgary **June 2024 - Present**

- Improved wellbore positioning accuracy by 25% by implementing advanced signal processing filters (Kalman, Moving Average, Band-pass) for real-time magnetic ranging data analysis
- Improved ranging algorithm performance by 10% by reverse engineering and optimizing legacy C codebase for magnetic ranging calculations, enabling seamless integration with modern Python-based systems.
- Engineered end-to-end data pipelines handling 100GB+ daily drilling data by implementing automated ETL processes, reducing data preparation time by 60%
- Eliminated 25% of data gaps along a wellbore by implementing automated validation checks within the real-time monitoring system
- Reduced manual data review time from 40 hours to 15 hours every month by designing automated data pipelines with real-time quality control checks
- Improved cross-team collaboration by 50% by developing interactive visualization tools, enabling real-time decision making for drilling operations

Graduate Research Assistant, University of Calgary **Aug 2022– Jun 2024**

- Was able to predict borehole dysfunction events 30% of the time by developing signal processing models that analyze real-time drilling parameters and predict potential failures
- Enhanced understanding of drilling dynamics by conducting bit-rock interaction experiments alongside a PhD researcher, producing data that helped better understand the downhole interactions

Beoflow, Data Scientist **Jan 2020 - May 2022**

- Increased athlete performance analysis efficiency by 75% by developing a Streamlit-based video analysis application that automated movement pattern detection and evaluation, and deployed models to track performance metrics of athletes enabling them to optimise training and recovery.

Summer Research Intern, University of Calgary **Apr 2022- Aug 2022**

- Accelerated data analysis workflow by 40% by developing reusable Python modules for processing large-scale drilling operations data
- Streamlined drilling data accessibility by architecting a data lake solution that consolidated multiple data sources, enabling automated generation of operational insights and reducing data preparation time through custom visualization tools

PROJECTS

Drillbotics at the University of Calgary, Team Lead, University of Calgary **Aug 2023-Jun 2024**

- Led a cross-functional team of 5 engineers to secure runner-up position in International Drillbotics competition by improving the autonomous drilling capabilities of the rig system.
- Decreased system development time by establishing agile project management practices and weekly technical reviews
- Secured $10,000 in project funding by presenting innovative autonomous drilling solutions to faculty and industry sponsors

SPE Geothermal Datathon **Mar 2023 – May 2023**

- Won first place in international competition by leading a team of 6 to develop optimal well placement strategies using ML algorithms
- Reduced computational time by 20% by implementing efficient data processing pipelines for large-scale geological datasets
- Enhanced prediction accuracy by 15% by developing machine learning models for automated geological feature interpretation

Techno Economic Analysis **Mar 2022 – Aug 2022**

- Enhanced geothermal site selection accuracy by 40% by developing GIS-based analysis tools that integrated geological, economic, and infrastructure data.
- Identified 5 optimal geothermal development locations in Alberta by analyzing temperature gradients, and economic factors
- Improved investment decision clarity by 35% by developing interactive visualization dashboards that showcase project viability metrics

Programming & Development: Python (NumPy, Pandas, SciPy, Plotly), C, JavaScript, TypeScript/React, SQL, Git, Java, HTML, CSS, R
Data Science & Analysis: Signal Processing, Machine Learning, Statistical Analysis, Data Visualization, Data Aggregation, Data Modeling
Tools & Technologies: Tableau, Microsoft Excel, PowerBI, Spotfire, GIS Systems, Wellbore Survey Management Tools, Compass
Domain Expertise: Geothermal Drilling Systems, Autonomous Rig Operations, Drilling Optimization, Wellbore Survey Management

EDUCATION

University of Calgary, Calgary, AB
Master of Science in Chemical Engineering | Specialization in Energy and Environment **Aug 2022-June 2024**
Relevant Coursework: Machine Learning, Control Systems, Advanced Statistics, Advanced Signal processing, Advanced Drilling Engineering
University of Calgary, Calgary, AB
Bachelor of Science in Oil and Gas Engineering **Aug 2017 - Aug 2022**
Indian Institute of Science, Bangalore, India
Advanced Certification in Computational Data Science **Oct 2023 – Nov 2024**