Igor Fernandes

Engenheiro Químico | Pesquisador em Machine Learning e Processos Químicos

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RESUMO PROFISSIONAL

Ongoing bachelor’s degree candidate in Chemical Engineering with a solid foundation in industrial processes, seeking an Intern (QHSE) position. Possesses experience in scientific research, process simulation, and data analysis, adept at optimizing chemical systems. This background is directly applicable to supporting quality control activities, including monitoring performance indicators (KPIs) and assisting with improvement plans. Eager to leverage strong problem-solving and technical communication skills to contribute to preparing reports, presentations, and managing project record controls within a dynamic team environment.

EXPERIÊNCIA PROFISSIONAL

Pesquisador de Iniciação Científica
Mar 2023 - Presente
Universidade Federal de São Paulo (UNIFESP)
Santos, SP

- Desenvolvimento de modelos de Machine Learning para predição de propriedades termodinâmicas de sistemas químicos
- Análise de grandes volumes de dados experimentais utilizando Python (pandas, scikit-learn, TensorFlow)
- Simulação de processos químicos em Python e validação experimental
- Elaboração de artigos científicos e apresentação de resultados em congressos

FORMAÇÃO ACADÊMICA

Bacharelado em Engenharia Química
Universidade Federal de São Paulo (UNIFESP)
2021 - 2025 (Previsão) | Santos, SP

HABILIDADES E FERRAMENTAS

Linguagens de Programação:
Python, SQL, MATLAB, JavaScript

Engenharia Química:
Termodinâmica, Reatores Químicos, ASPEN Plus, HYSYS, ChemCAD, Fenômenos de Transporte

Machine Learning & Data Science:
pandas, NumPy, scikit-learn, TensorFlow, PyTorch, Matplotlib, Seaborn

Ferramentas & Tecnologias:
Jupyter Notebook, Git, VS Code, Docker, Linux

Soft Skills:
Resolução de Problemas, Pesquisa Científica, Comunicação Técnica, Trabalho em Equipe

PROJETOS DE PESQUISA

Predição de Propriedades Termodinâmicas com ML

- Developed a machine learning regression model to predict viscosity of chemical mixtures, demonstrating advanced analytical skills relevant for an ongoing bachelor's degree in Chemical or Production Engineering.
- Achieved a 35% reduction in prediction error compared to classical models, showcasing precision valuable for monitoring performance indicators (KPIs) in QHSE activities.
- Processed and analyzed a dataset of over 5000 experimental points in Python, enhancing data management and contributing to robust quality control understanding.

Simulação de Reator Químico em Python

- Implemented a kinetic model for a polymerization reactor in Python, applying core Chemical Engineering principles to understand and optimize process behavior.
- Validated the model experimentally with an average error of less than 5%, demonstrating meticulous attention to detail crucial for quality control and nonconformity monitoring.
- Automated parametric sensitivity analysis, supporting efficient process monitoring and identification of improvement areas, aligning with an Intern (QHSE) role.

Dashboard de Análise de Processos

- Developed a web application for visualizing chemical process data using Python (Streamlit), directly supporting the monitoring and archiving of Quality records.
- Created an interactive interface for trend analysis and anomaly detection, enhancing the ability to track performance indicators (KPIs) and identify potential nonconformities.
- Integrated with a SQL database for historical data, providing a robust system for preparing reports and project record controls, aligning with Intern (QHSE) responsibilities.

IDIOMAS

Português: Nativo

Inglês: Avançado (Leitura/Escrita: Fluente, Conversação: Intermediário)

Espanhol: Intermediário

CERTIFICAÇÕES

• Python para Data Science - Coursera (2023)

• Machine Learning Specialization - Stanford Online (2024)

• Segurança em Processos Químicos - UNIFESP (2023)