Lonza

Process Analytical Technology (PAT) and Data Science Internship

Job Description Summary

Today, Lonza is a global leader in life sciences operating across three continents. While we work in science, there's no magic formula to how we do it. Our greatest scientific solution is talented people working together, devising ideas that help businesses to help people. In exchange, we let our people own their careers. Their ideas, big and small, genuinely improve the world. And that's the kind of work we want to be part of.

As a trainee in the PAT area, you will work in a dynamic and interesting environment at the Visp site Switzerland and get the chance to develop yourself and gain insights into various topics related to PAT. This is a unique opportunity for a young student to gain experience in supporting innovation at Lonza in a process-engineering group that works closely with development and production areas.

As a junior PAT Intern, you will play a crucial role in enhancing our understanding and optimization of chemical processes through the application of spectroscopic techniques (Raman, NIR, Mid-IR, UV-VIS) and chemometrics. This position focuses on leveraging data science to analyze spectroscopic and process data, extracting valuable information to improve process control, efficiency, and product quality.

In general, the student will support the following main activities of the PAT laboratory in the Lonza Pharma Biotech and Nutrition Sector for approximately 6 months.

Your Tasks:
Development and optimization of PAT technology for use from the lab to the manufacturing area. You will support the integration of PAT method via data analysis with process optimization efforts, working closely with development chemists.

Key Responsibilities:

- Collaborate with the PAT team to apply spectroscopic methods for on-line/in-line/at-line analysis, monitoring and optimization of chemical processes
- Utilize data science techniques to analyze and interpret spectroscopic data, integrating findings with process data for comprehensive insights.
- Develop and implement algorithms and models for process prediction and optimization
- Participate in the design and execution of experiments to test models and algorithms performance, ensuring their applicability in industrial settings.
- Engage in cross-functional projects, contributing to the development and optimization of PAT applications for enhanced process understanding.
- Be a proactive team player with a high degree of dedication and the ability to inspire and contribute to a positive working environment.

Key Requirements:

- Demonstrate enthusiasm for laboratory work, spectroscopy, chemometrics, and data analysis.
- Currently pursuing or recently completed a degree in Chemistry, Chemical Engineering, Data Science, or a related field, with a strong interest in PAT and data analytics.
- Demonstrated experience or strong interest in spectroscopic techniques and their application in chemical processes. Interest and aptitude for learning and applying PAT techniques such as Raman, NIR, Mid-IR, UV-VIS spectroscopy, and other measurement techniques suitable for on-line/in-line/at-line measurements.
- Familiarity with data analysis, chemometrics, and their application in process optimization. Coding skills with Python, Matlab, or equivalent platforms, with a keen interest in applying these skills would be consider as a plus.
- Ability to thrive in a fast-paced environment and manage multiple tasks simultaneously.
- Excellent analytical and problem-solving abilities, with a keen attention to detail.
- Strong communication skills, capable of working effectively in a team and presenting findings to technical audience. Professional proficiency in English is required; knowledge of German is beneficial.

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Every day, Lonza's products and services have a positive impact on millions of people. For us, this is not only a great privilege, but also a great responsibility. How we achieve our business results is just as important as the achievements themselves. At Lonza, we respect and protect our people and our environment. Any success we achieve is no success at all if not achieved ethically.

People come to Lonza for the challenge and creativity of solving complex problems and developing new ideas in life sciences. In return, we offer the satisfaction that comes with improving lives all around the world. The satisfaction that comes with making a meaningful difference.