

BOSAQ I Water Experts – Industrial Data & Digital Twin Engineer

BOSAQ develops advanced water treatment technologies for drinking water production, industrial water reuse and decentralized water systems. Beyond hardware and process engineering, BOSAQ is investing heavily in advanced analytics, artificial intelligence and digital technologies to make water treatment systems smarter and more autonomous.

We believe that digital twins, anomaly detection and process intelligence will become a major differentiator in how water treatment plants are designed, operated and maintained.

To accelerate this vision, we are looking for an Industrial Data & Digital Twin Engineer who will help transform operational data into actionable insights and intelligent decision support systems.

Your role

You will be responsible for developing the analytical foundation behind BOSAQ's next generation of smart water treatment systems.

Using operational data, engineering knowledge and modern data science techniques, you will build digital twin models, anomaly detection algorithms and performance analytics that support operators, service teams and engineers.

You will work closely with the Operations Team, Process Engineers, Automation Engineers and Application Developers to ensure solutions are both technically robust and operationally relevant.

Key Responsibilities

Digital Twin Development

- Develop digital twin models of BOSAQ treatment technologies (UF, NF, RO, ...).
- Model key treatment steps and process components.
- Simulate process behaviour under different operating conditions.
- Improve understanding of process performance and system limitations.
- Support process optimization through data-driven insights.

Anomaly Detection & Predictive Analytics

- Develop algorithms that detect abnormal operating conditions.
- Create models capable of identifying process deviations before failures occur.
- Build predictive maintenance capabilities for critical equipment.
- Continuously improve model performance using operational feedback.

Data Infrastructure & Analytics

- Structure and standardize process data from installations worldwide.
- Develop reusable analytics workflows and methodologies.

- Support deployment of analytical models in operational environments.
- Maintain data quality and validation frameworks.
- Collaborate on industrial data architecture and governance.

Dashboard Development & Service Support

- Develop standardized dashboards for service and operations teams.
- Transform complex process data into actionable visualizations.
- Standardize KPIs across BOSAQ installations.
- Build fleet-wide performance monitoring tools.
- Improve visibility of asset health and operational performance.

Testing & Operational Validation

- Work directly with the Operations Team to test and validate models.
- Investigate operational events and system anomalies.
- Perform root-cause analyses.
- Validate digital twin accuracy against real-world plant behaviour.
- Translate operational feedback into model improvements.
- Support commissioning and troubleshooting activities when required.

Artificial Intelligence & Future Technologies

- Contribute to BOSAQ's AI roadmap.
- Explore advanced machine learning techniques for water treatment.
- Develop scalable frameworks for future autonomous operation.
- Support development of intelligent decision support tools.
- Evaluate emerging technologies relevant to industrial AI and process optimization.

Desired Profile

Education

Master's degree in:

- Bioscience Engineering
- Chemical Engineering
- Environmental Engineering
- Computer Science
- Data Science
- Industrial Engineering

or equivalent through relevant experience.

Experience

- Experience in data science, industrial analytics or process modelling.
- Experience with real-world operational data is highly valued.

- Experience in water treatment, utilities, industrial manufacturing or process industries is an advantage.

Technical Skills

Strong knowledge of:

- Python
- SQL
- Data modelling
- Statistical analysis
- Machine learning
- Data visualization

Experience with several of the following is a strong asset:

- Power BI
- Grafana
- Azure
- Databricks
- Docker
- MQTT
- OPC-UA
- Industrial IoT platforms
- Time-series databases

Personal Competencies

- Strong analytical mindset
- Curious and research-oriented
- Able to bridge engineering and data science
- Pragmatic and results-driven
- Strong collaboration skills
- Passionate about sustainability, technology and innovation
- Comfortable working in a fast-growing scale-up environment

You will feel like a fish in our water if...

- You like honest, straightforward, and to-the-point communication in **Dutch or English** (open feedback make us all better)
- Integrity is one of your key values
- A '**work hard-play hard**' culture in a pleasant and dynamic start-up drives you
- You are **socially engaged** and you believe in the power of 'business as a force for good'
- You don't take yourself too seriously

You'll love us for

- **Changing the world** for the better and giving you the chance to be a part of it
- **Investing** in you: we believe talent like yours needs to be fostered and watered regularly for it to grow
- Providing you with opportunities: our company is growing and so will you
- An **attractive and creative remuneration package** for a job with impact
- A flexible schedule in place and time: you **schedule your work as it fits you**, to be at your best

<https://bosaq.com/>