We are Winterhalter, the warewashing specialist from Meckenbeuren. With over 2,000 employees at more than 40 locations worldwide, we are among the market leaders in commercial kitchen technology. Every day, our employees work toward perfect cleaning results, explore new paths, set industry standards, and inspire customers.

Shape the future with us as

Master's Thesis: Predictive Maintenance – Heating Elements

WHAT WE NEED YOU FOR

- You will design and write a master's thesis on predictive maintenance for the electric heating elements of a commercial dishwasher.
- The master's thesis should develop a holistic approach to AI-based condition monitoring of the heating elements – from suitable sensor technology and data acquisition to analysis and condition prediction.
- You will analyze the current state of the art in predictive maintenance and condition monitoring for electric heating systems and derive relevant approaches for your work.
- You will identify and evaluate suitable sensors and telemetry data for monitoring the condition of heating elements.
- You will process and interpret the collected data, extract meaningful features, and develop condition indicators based on them.
- You will develop a data-based analysis model that assesses the condition of the heating elements and predicts their remaining service life and failure probability.
- You will independently conduct validation tests—either in the lab or under real operating conditions—and assess the accuracy of your predictions.
- Collaboration with a parallel master's project is guaranteed in order to make optimal use of synergies in data structures, platforms, and methodological approaches.
- You will systematically document your results and derive practical recommendations for implementation in series development.

WHAT WE'RE LOOKING FOR

- You are enrolled in a master's program in electrical engineering, mechatronics, mechanical engineering,

computer science, or a comparable field.

- You are interested in data analysis and hands-on development work.
- You have basic knowledge of the design and use of sensor systems.
- Initial experience in data analysis and machine learning (e.g., Python, C++) is an advantage.
- You will have no difficulty familiarizing yourself with new topics.
- Your analytical thinking, independent and structured work style, and strong communication skills help you tackle complex topics.
- Knowledge in measurement and control technology or signal processing is desired.
- Your excellent English skills enable you to write your thesis in English.
- Supervision can be provided in both - German and English.

Neue Wege gehen. Den Markt mitgestalten. Kunden begeistern. Hört sich gut an? Dann freuen wir uns auf Ihre Bewerbung!
Ihre Ansprechpartnerin: Mara Gärtner 07542-4025591, mara.gaertner@winterhalter.de

Further information is available at jobs.winterhalter.com/de/winterhalter-als-arbeitgeber

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Winterhalter Product & Production GmbH | Winterhalterstraße 2 – 12 | 88074 Meckenbeuren