



## Master Thesis: Numerical analysis of semiconductor reliability models

### Job description

At KAI GmbH, you will perform your thesis project in an industrial research environment, guided and supported by experienced researchers. We work in close cooperation with universities and research facilities supporting your academic education, whereas our industrial partner Infineon offers interesting opportunities for a prospective career path in the semiconductor industry. To guarantee the reliability of semiconductor devices, reliability testing as well as statistical modelling is needed. In the past years, one research focus of the KAI Data Science team was the development of physics based statistical models by combining the expert knowledge about degradation mechanism in devices with statistical modelling of the recorded test data. The complexity of the problem requires advanced modelling techniques and includes numerical challenges. To ensure the stability of the developed models, we are searching for a master student joining our team.

Your main tasks will be:

- Literature study on statistical models for reliability, lifetime and fatigue modelling
- Understanding the currently applied method to model reliability data
- Implement and evaluate additional modelling approaches with a representative data set
- Numerical analysis of the different modelling approaches & implementations with a representative data set
- Constant exchange with application domain experts and data science experts
- Documentation of the results and preparation of a master thesis

Further Information:

Type of employment: Full-time (Flexible working hours from Monday to Friday between 6 a.m. and 7 p.m.)  
Duration: min. 8 months

This thesis has to be written in cooperation with an university.

### Profile

You have a completed Bachelor's degree and advanced Master's degree in Mathematics, Statistics, Biostatistics, Mechanical Engineering, Computer Science or similar. You should also offer:

### At a glance

Location: Villach (Austria)  
Job ID: 337930  
Start date: May 02, 2022  
Entry level: 0-1 year  
Type: Full time  
Contract: Temporary

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### Contact

Nico Steinhauser  
Student Talent Attraction Manager



- Knowledge in statistical/degradation/survival modelling
- Programming skills: R and Python
- Language skills: Fluent in English or German

This position is subject to the collective agreement for workers and employees in the electrical and electronics industry (full-time), employment group D for master students (<https://www.feei.at/leistungen/informations-service/mindestlohne-und-gehalter-2020>).

Please attach the following documents (English or German) to your application:

- Motivation letter
- CV
- Certificate of matriculation at a university
- Transcript of records
- Highest completed educational certificate
- Reference letter

