



# Internship/Master thesis on optical pose estimation metrology

## Oberkochen

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### Your role

We develop optical metrology systems based on coherent illumination and detection for the high-accuracy determination of the pose (six degrees of freedom) of workpieces. For maximum accuracy, an optimal design and calibration of the measuring system is necessary. As part of this master's thesis, you will develop, test, and implement novel algorithms for pose estimation, realize proof-of-principle experiments on a prototype, and evaluate alternative metrology schemes:

- Development of multi-fiber based interferometers
- Validation of the results with test measurements
- Evaluation of the technical feasibility on system and sub-component level
- Research existing solutions in the scientific and patent literature
- Quantitative simulation of the tolerance budget
- Documentation of the test results

### Your profile

- A background in the STEM area (Photonics, Physics, Computer Vision, Electrical Engineering, ...)
- Ideally a bachelor's degree in one of the above subjects
- Applied knowledge in Python, Matlab or C++
- Interest in metrology
- As a student, you will work on an equal footing with your colleagues, you will gain deep insights into a company that creates products for the world of tomorrow, and you will create ideal conditions for your later career.

In a spacious modern setting full of opportunities for further development, ZEISS employees work in a place where expert knowledge and team spirit reign supreme. All of this is supported by a special ownership structure and the long-term goal of the Carl Zeiss Foundation: to bring science and society into the future together.

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### Your ZEISS Recruiting Team:

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