Stellenbezeichnung: Student Assistant for Prototype Development and Testing of a 3D Vision Sensor Net

Light is a versatile tool. Due to its many applications, as well as its unique properties as an electromagnetic wave and a light particle, it is a key technology for future challenges of the modern world. In this context, the Fraunhofer - Institute for Applied Optics and Precision Engineering IOF, situated in the long-standing tradition of the optics hotspot Jena, is conducting research into the ongoing development of photonic technologies to solve a wide variety of problems and application scenarios.

The department »Imaging and Sensing« of Fraunhofer IOF is looking for a student assistant for a long-term commitment, who will be developing and testing a 3D vision sensor net, with the prospect of completing a Bachelor's or Master's thesis.

3D vision sensor nets are arrangements of multiple high-end 3D sensors, which observe the measurement object or scene from different perspectives. In order to ensure a reliable fusion of all individual 3D point clouds into a global coordinate system (so-called multi-view measurement), high measurement and calibration accuracy is required. The aim of the project is to obtain merged 3D models of large-volume structures (e.g., with applications in shipbuilding) with an accuracy comparable to that of the single 3D views. To achieve this, a new global non-linear least square optimization strategy has to be developed and tested.

What you will do

- Setup of high-end industrial optical sensor technology for the detection and localization of markers and/or reference specimens
- Investigation of the alignment/positioning accuracy based on given samples
- Development and optimization of image analysis algorithms (Python, OpenCV, C++)
- Optimization of the achievable and reproducible accuracy for 3D point cloud fusion
- Acquisition, evaluation, and presentation of measurement series for scientific publications

What you bring to the table

- Current studies in physics / photonics, engineering or another related field
- Basic knowledge of working in laboratories, with scientific equipment, and in digital data processing
- Motivation to learn controlling of modern technologies, methods, and processes in the field of optical sensors
- Independent and systematic approach to work, creative and analytical thinking
- Commitment, team orientation and communication skills as well as friendly and open manner

What you can expect

- Collaboration in challenging research and development projects
- Collegial, open-minded and friendly team
- Variety of activities in a modern and well-equipped working environment
- Comprehensive professional support by scientific mentors
- Flexible working hours
- Excellent connections to public transport

The monthly working time is agreed individually. Remuneration according to the general works agreement for employing assistant staff.

We value and promote the diversity of our employees' skills and therefore welcome all applications - regardless of age, gender, nationality, ethnic and social origin, religion, ideology, disability, sexual orientation and identity. Severely disabled persons are given preference in the event of equal suitability.
With its focus on developing key technologies that are vital for the future and enabling the commercial utilization of this work by business and industry, Fraunhofer plays a central role in the innovation process. As a pioneer and catalyst for groundbreaking developments and scientific excellence, Fraunhofer helps shape society now and in the future.

Interested? Apply online now. We look forward to getting to know you!

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