We are Austria’s largest Research and Technology Organisation and an international player in the research areas that we cover. This makes us a leading development partner for industry and a top employer in the scientific community. Our Center for Vision Automation & Control in Vienna invites applications for a:

**PhD Thesis „Robot Assisted Structure from Motion for Highly Precise 3d Reconstruction”**

- In our Competence Unit “High Performance Vision” you will be part of a multidisciplinary team focusing on ultrafast line scan sensors and cameras, scalable embedded vision systems, computational imaging and deep learning. We are researching on technologies for image processing with a focus on real-time capabilities at extreme data rates and high complexity.
- In order to successfully develop such image processing systems, new complex systems such as hardware, software and intelligent algorithms are required.
- Within this research project, you will be focusing on Structure-from-Motion (SfM), a photogrammetric range imaging technique for estimating 3D structures from two-dimensional image sequences that may be coupled with local motion signals.
- In this context, we will focus on the research and application of robust algorithms for industrial robot-guided multi-view matching.
- Furthermore, the combination with other methods such as structured light or photometric stereo will be investigated.
- Together with our team, you will review existing methods and continue to research on improvement methods.
- You will work on the development and optimization of the hardware setup, which consists of either a camera + illumination mounted on a robot arm and a static object, or a fixed sensor head and a moving object on an industrial transport platform.
- To enable a complete 3D reconstruction using industrial multi-view data, you will be researching new and stable algorithms (possibly based on Deep Learning) that enable the recognition of fine details in industrial environments - Good camera calibration and stable features are the basis for robust multi-view matching tasks.
- You will increase your knowledge about image processing and machine learning in industrial quality inspection applications.
- You will support our team in the supervision of master students.
- You will cooperate with national and international research institutions.
- You will present your research results at conferences and in international journals.
- You will gain experience in a group of international scientists and build up your professional network.

**Your qualifications as an Ingenious Partner:**

- Master’s degree in electrical engineering, computer science, physics or similar.
- Good programming skills in C++, CUDA, Python, Matlab or other languages.
- Experience with methods of image processing (stereo matching, light fields, openCV) and machine learning is an advantage.
- Interest in image processing and industrial inspection
- Very good German or English knowledge (in spoken & written).

**What you can expect:**

EUR 2,205.60 gross per month for 30 hours/week based on the collective agreement. There will be additional company benefits! As a research institution, we are familiar with the supervision and execution of PhD theses and we are looking forward to supporting you accordingly.

At AIT, the promotion of women is important to us - that’s why we are especially looking forward to applications from ambitious female candidates.

**TOMORROW TODAY – WITH YOU?**

Please submit your application documents including your CV, cover letter and certificates online, at: https://jobs.ait.ac.at/Job/128367?culture=en