

Fully funded PhD-Research Position on Control System Design for MEMS Scanners in Automotive Applications

A fully funded research position (full-time, 40 hours/week) at the PhD-student level is offered in the group of Prof. Georg Schitter at the Automation and Control Institute (ACIN) of the Vienna University of Technology.

Project goal:

This PhD-project aims towards the development of MEMS scanning systems, mainly including model based control and filter design for highly robust photonic scanning solution against environmental influences such as vibrations, shocks and temperature fluctuation. Considering various applications such as MEMS lidars and augmented reality headup displays, the main challenge of the project is development of a high performance, and automotive-grade robust MEMS solution for various MEMS mirrors, enabling competitive photonic MEMS scan solutions in automotive market. In addition, due to the nature of the optical MEMS scanning systems, the project consists of multidisciplinary research topics in the field of physics, optics, as well as mechanical, electrical engineering, while providing opportunities to gain experiences in those various fields during the project.

In this project, several controller concepts for MEMS mirrors are designed and evaluated their robustness against harsh environmental conditions based on the models and concepts. Based on the models, sensing and actuation concepts are investigated and evaluated their robustness against harsh environmental conditions. Test systems are also implemented in applications with the designed MEMS scanning systems to experimentally verify the target performance in the final application level.

The starting date is planned as soon as possible, depending on the availability and preference of the successful candidate.

Requirements:

We are looking for candidates holding an MSc degree in Electrical or Mechanical Engineering, Cybernetics, Physics, Aerospace Engineering, or equivalent, preferably with a strong background or experience in at least one area of system engineering, control engineering, mechatronics, mechanical design, scientific instrumentation, embedded systems, actuation, precision engineering, measurement systems, MEMS, and digital design in FPGA.

Good fundamentals, excellent grades, and interest in mathematics and physics are prerequisites. Motivation to pursue novel research in close collaboration with well-reputed international industry partners and research universities is essential. Thus good communicational skills, fluency in English or German, and a goal-oriented work attitude as member of a dynamic international research team are expected.

Conditions of employment:

The appointment will be for a period of up to four years. As an employee of the TU Vienna you will receive a competitive salary as well as excellent secondary benefits package, including a flexible work week, health insurance, social security, and additional company retirement benefits. Salary and benefits are in accordance with the Collective Labor Agreement for Austrian universities.

The annual gross salary of a research assistant (PhD student) in the first year starts at **€ 37.751**, and grows to **€ 44.846** in the 4th year of the appointment.

We offer the opportunity to perform scientifically challenging research in a multi-disciplinary research environment, with a group of international researchers and strong collaboration with industrial, governmental, and university research laboratories. Further career growth in all teaching, research, and industrial applications is provided.

How to apply:

To apply for this position, please email your application in pdf-format to yoo@acin.tuwien.ac.at

- a cover letter, including a statement that gives your motivation for this position
- a full CV, and your grades
- an abstract of your MSc thesis and a list of your publications (if any), and
- the names and contact information of two professional references

The position will remain open until filled, but an early date for application is preferred and encouraged.

For more information about the ACIN department and Vienna University of Technology, please visit our website http://www.acin.tuwien.ac.at/fileadmin/acin/files/IATpositions_webpage.pdf and <http://www.tuwien.ac.at>.

Further information about Vienna, the city with the highest quality of living worldwide (https://en.wikipedia.org/wiki/Mercer_Quality_of_Living_Survey), can be obtained at <http://www.wien.gv.at/>.