Start your mission at DLR.

Climate, mobility and technology are changing globally. DLR, the Federal Republic of Germany's research center for aeronautics and space, uses the expertise of its 55 research institutes and facilities to develop solutions to these challenges. Our 10,000 employees (as of February 2021) share a mission – to explore Earth and space and develop technologies for a sustainable future.

The Institute of Robotics and Mechatronics develops a wide array of robots to enable humans to interact more safely and efficiently with their surrounding environments. The robots are designed to act in surroundings inaccessible or dangerous to humans as well as to support humans in everyday life and work.

For our Institute **Robotics and Mechatronics** in **Oberpfaffenhofen** we are looking for a

Computer Scientist for Neuromorphic Motion Planning (Masterthesis)

Your Mission:

Sampling-based motion planning algorithms like Rapidly-exploring Random Trees (RRT) and Probabilistic Roadmaps (PRM) have proven to be effective in high-dimensional configuration spaces and can handle complex, real-world environments. However, this approach can suffer from the curse of dimensionality, where the number of samples needed to cover the configuration space grows exponentially with the number of dimensions.

We are seeking a motivated and talented student to join our research team as a Masterthesis Intern in robot motion planning: Leveraging neuromorphic computation to increase the efficiency of motion planning through the integration of probabilistic roadmaps with the state of the art in neuromorphic compuation hardware. The successful candidate will have the opportunity to work on cutting-edge projects in the field of robotics and contribute to the advancement of motion planning algorithms. Your responsibilities will be:

- Theoretical analysis and algorithm development for robotic motion planning,

- Integrating algorithms in simulated and physical autonomous systems,

- Comparing the performance of new algorithms to conventional solutions.

- Understanding novel computer architectures, e.g., neuromorphic, to drive development of efficient motion planners for autonomous systems.

We offer:

- The opportunity to work on real manipulators for industrial automation.

- An opportunity to learn from experienced robotics professionals.

- A chance to grow and apply your skills and knowledge.
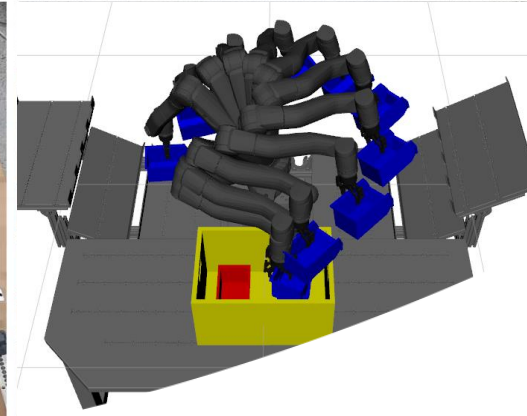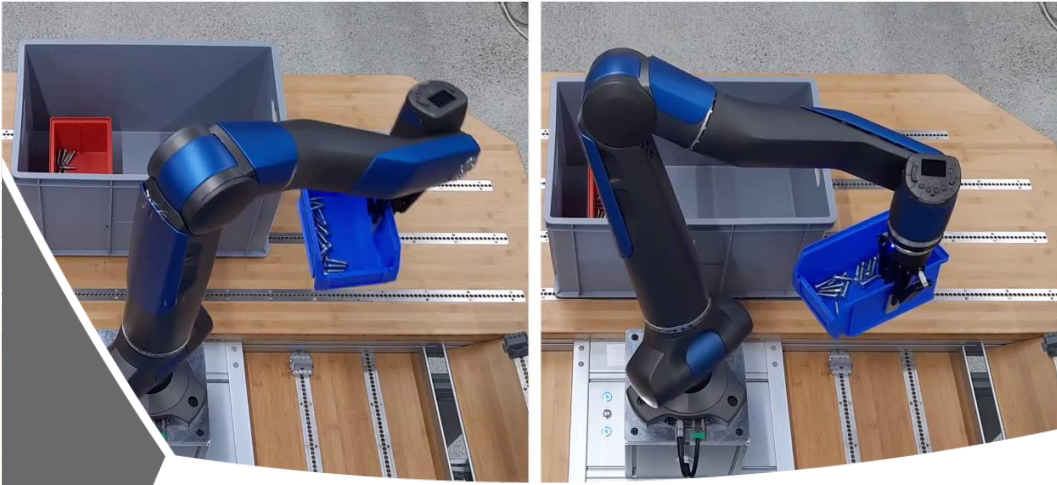
Your Qualification:

- Currently enrolled in a Master program in Computer Science, Physics, Mathematics, Robotics, Mechatronics, Computer/Electrical Engineering, or a related field.

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- Ability to communicate design decisions effectively and work with a team to co-develop software

- Experience in C/C++ and Python; the ability to design and write quality code

- Experience with ROS or similar systems-level programming frameworks.

Your Start:

If you are passionate about robot motion planning and want to work with a team of like-minded individuals, we would love to hear from you! Please submit your CV and a cover letter outlining your qualifications and experience to **peter.lehner@dlr.de**.

We will be reviewing applications on a rolling basis, so please submit your application as soon as possible to be considered. Please note that the internship requires a full-time commitment.

Thank you for your interest, we look forward to hearing from you!

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