

ORBITAL G&C AND OPTIMIZATION INTERNSHIP

Embotech is a software company developing cutting-edge motion planning technology for autonomous vehicles. We are determined to accelerate the transition towards safe autonomous space transportation by leveraging the core real-time optimization technology that we have been developing since 2012.

Our team is comprised of highly skilled employees with a passion for excellence and efficiency. We are looking for highly motivated people to help us solve one of the most complex challenges of tomorrow and take our company to the next level.

As an orbital G&C and optimization intern you will join a small team of top technical talent to develop safe, efficient, and reliable trajectory generation algorithms for active debris removal and in-orbit servicing mission scenarios. You will be involved in the simulation and testing of novel algorithmic solutions and software that meet ambitious specifications in terms of reliability, control, and computational performance. Excitement and learning opportunities are guaranteed in this position.

Responsibilities

- Formulate orbital maneuvering and space robotics optimization problems
- Implement and improve real-time numerical optimization-based guidance designs
- Implement orbital dynamics simulations
- Maintain and extend Simulink based space simulation tools
- Write automated testing tools to improve the behaviour of your algorithms and software
- Interface to flight simulators and 3D visualization tools
- Document your code and designs
- Coordinate development efforts with other team members

Basic Requirements

- Bachelor's degree in mechanical, electrical or computer engineering, applied mathematics, robotics, or a similar degree with an emphasis on optimization and control
- Strong knowledge of (convex) optimization theory
- Knowledge of modelling and analysis of dynamical systems, esp. orbital mechanics
- Strong knowledge of control theory, with an emphasis on real-time, numerical optimization methods
- Knowledge in flight dynamics and orbital mechanics
- Proficiency in MATLAB/Simulink
- Knowledge of C/C++
- Knowledge of real-time systems is a plus
- Knowledge of 3D game engines and 3D modelling tools is a plus
- Proficient in written and spoken English

We offer an exciting internship opportunity in a fast-growing company in the heart of Zurich. If you think you might be the right fit for us, we look forward to receiving your application.

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