M.Sc. thesis position on intelligent manipulation of airborne objects
Aalto University

Job Title	M.Sc. thesis position on intelligent manipulation of airborne objects
Department	T410 Dept. Electrical Engineering and Automation
Institution	Aalto University , , Finland
Date Posted	Feb. 12, 2025
Application Deadline	Open until filled
Position Start Date	Available immediately
Job Categories	Graduate Student
Academic Field(s)	Electrical and/or Electronics
Job Website	https://aalto.wd3.myworkdayjobs.com/aalto/job/Otaniemi-Espoo-Finland/MSc-thesis-position-on-intelligent-manipulation-of-airborne-objects_R42285-4
Apply By Email	

Job Description

The Robotic Instruments group at the Department of Electrical Engineering and Automation, Aalto University School of Electrical Engineering, is looking for an M.Sc. thesis student to work on intelligent manipulation of airborne objects. This thesis project will focus on leveraging airflow fields to control lightweight objects, such as dandelion-seed-inspired specimen or agents, in free space, expanding on our previous work in this domain of [url=https://www.aalto.fi/en/department-of-electrical-engineering-and-automation/airflow-field-based-manipulation]airflow field-based manipulation.

Project Description

The successful applicant will engage in research with the potential for publication, focusing on the manipulation of lightweight objects using controlled airflow fields. The work includes: * Refining a

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gradient-based airflow manipulation system; * Modelling object motion and potentially the airflow field; * Developing motion control and planning algorithms for precise manipulation; * Conducting experimental validation to verify theoretical models and control strategies; * Writing research documentation and preparing findings for potential publication;

This research contributes to controlled transport of lightweight objects in airflows, with potential applications in precision agriculture and environmental monitoring.

Position Details * Duration: 6 months, starting from April 1, 2025, or based on agreement; * Location: Aalto University Department of Electrical Engineering; * Salary: Based on the university salary scheme; * The position is mainly open to Aalto University students.

Required Qualifications

The applicant should have a background in one or more of the following fields: * Automation and robotics * Software development * Mechatronics * Electrical Engineering or related fields

Preferred Skills and Experience: * Software development in Python, MATLAB, and C/C++/C# * Design of controllers for dynamic systems * Automation system software development * Mechatronic design and experimental work * Hands-on skills and attention to detail

How to Apply

Please submit your application as a single PDF file at your earliest convenience or by Friday, 28.02.2025, through the recruitment system by using the "Apply now!" link below.

Your application should include (in English): * Letter of motivation (1-2 pages) * Curriculum Vitae (CV) * Academic transcripts

Please note: Aalto University’s employees should apply for the position via internal HR system Workday (Internal Jobs) by using their existing Workday user account (not via the external webpage for open positions). Aalto University’s students and visitors should apply as external candidates with personal (not aalto) email.

All applications should be submitted using the online application system of Aalto University. Email applications will NOT be considered. For further inquiries, please contact Shahriar Haeri ([url=mailto:shahriar.haeri@aalto.fi]shahriar.haeri@aalto.fi). In recruitment process related questions, HR Advisor Hanna Koli ([url=mailto:hanna.koli@aalto.fi]hanna.koli@aalto.fi) is happy

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to help you.

Aalto University reserves the right for justified reasons to leave the position open, to extend the application period, reopen the application process, and to consider candidates who have not submitted applications during the application period.

More about Aalto University:
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Contact Information

Please reference Academickeys in your cover letter when applying for or inquiring about this job announcement.

Contact

Finland