

# Master Thesis – Advanced control for Optical Image Stabilization

## Job Title

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## Job Description

### **Title**

Master Thesis – Advanced control for Optical Image Stabilization

### **Category**

Control theory, System Identification

### **Scope**

Master thesis, 2 students completing 30 credits (20 weeks) each.

### **Background**

Camera shake can significantly degrade video quality. One effective solution to mitigate this issue is Optical Image Stabilization (OIS), which employs a movable lens within the camera to compensate for camera movements. The OIS measures the position of the camera with a gyroscope as well as the position of the moveable lens and uses this to calculate a desired control signal sent to a Voice Coil Motor that moves the lens. The latency between measuring the position signals and adjusting the lens to the correct position determines the performance of the image stabilization system. Axis is interested in trying alternative control methods that could improve the OIS performance. Implementation will be done in C/C++, while some analysis may utilize Python.

### **Goal**

The purpose of this master's thesis is to:

- Implement at least one alternative control method
- Compare the new method with traditional control
- Oral presentation at Axis Communications

### **Who are you?**

For this thesis proposal we target students that have a background in Automatic Control. We also expect applicants to have some basic knowledge of programming. The students also need to be able to get to the Axis HQ in Lund as the work will be done at the office.

### **OK, I am interested! What do I do now?**

You are valuable to us – how nice that you are interested in one of our proposals! There are a few things for you to keep in mind when applying.

- Applications are accepted in both Swedish and English, and you apply via the proposal advert.

- The announced thesis is open only to students affiliated with a Swedish University/College either directly or via an exchange program.
- When the thesis proposal states that it includes two students working together, we would like you to apply in pairs. In these cases, send one application each but make sure to clearly state in your application who your co-applicant is. If you have any questions, please contact us.
- Please attach your CV and University/College grade summary.

Who to contact for any questions regarding the position:

Peter Jonsson, [peter.k.jonsson@axis.com](mailto:peter.k.jonsson@axis.com), +46 76 175 1814

Type of Employment

Temporary Employment (Fixed Term)

We evaluate candidates continuously.

Posting End Date

2024-12-12

*Certain roles at Axis require background checks, which means applicable verifications will be done in these recruitments. Notice will be provided before we take any action.*

About Axis Communications

We enable a smarter, safer world by creating innovative solutions for improving security and business performance. As a network technology company and industry leader, we offer solutions in video surveillance, access control, intercom, and audio systems, enhanced by intelligent analytics applications.

With around 4500 committed employees in over 50 countries, we collaborate with partners worldwide. Together, we thrive in our friendly, open, and collaborative culture and inspire each other to think beyond the expected. United by our commitment to inclusion, diversity, and sustainability, we consistently seek to develop our skills and way of working.

Let's create a smarter, safer world

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