About Thorlabs
Thorlabs is a leading designer and manufacturer of photonics equipment for research, manufacturing, and biomedical applications. Founded in 1989, Thorlabs is headquartered in Newton, New Jersey with over 1400 employees at manufacturing and sales offices in the United States, Canada, United Kingdom, Germany, France, Sweden, Japan, China, and Brazil. As a vertically integrated company we design, develop, and manufacture our product portfolio. Approximately 90% of the products we sell are manufactured in-house.

Thorlabs Sweden in Mölndal has 39 employees and is divided into sales and tech support, manufacturing and research and development. One of the major products for both R&D and manufacturing is the Optical Spectrum Analyzers (OSA).

Thorlabs OSA software
Thorlabs Optical Spectrum Analyzers (OSA) perform highly accurate spectral measurements. Compatible with fiber-coupled and free-space light sources, these compact benchtop instruments suit a wide variety of applications, such as analyzing the spectrum of a telecom signal, resolving the Fabry Perot modes of a gain chip, and identifying gas absorption lines.

The OSA software displays either the fast-Fourier-transformed spectrum or the raw interferogram obtained by the instrument. In the main window, it is possible to average multiple spectra; display the X axis in units of nm, cm⁻¹, THz, or eV; compare the live spectrum to previously saved traces; perform algebraic manipulations on data; perform analysis on data and calculate common quantities such as transmittance and absorbance.
Master Thesis
Student are welcome with their own suggestions within the area optical instrument development, but here is a suggestion from our team:

A common application for the Thorlabs OSA is to test the performance of an optical device. A typical device can be a light source (such as a laser or LED) but also more complex systems can be investigated. The OSA software already includes a large number of analysis methods that enable measurements of optical power, wavelength, bandwidth, etc. available. The aim of this project is to simplify further for the end-user and build a general/"an umbrella" Pass/fail analysis mode in which a number of the available analysis methods can be selected and pass/fail conditions can be set for each method. As the tests are completed, the GUI should give response whether the device under test is OK or not. The second part of the project is to auto generate a report with the test results, where the user easily can see if the data is within set limits. There will be great possibilities to affect how this mode is designed.

The Thorlabs OSA software is written in C# and C++, and Microsoft Visual Studio is used as the IDE.

Requirements
We believe you have the following qualifications:

- Great programming skills in C#
- Experience with C++ and .NET
- Experience using Visual Studio
- Enthusiastic to learn
- An interest for technology
- Positive attitude 😊

Apply
- Start date: January 2017 or later
- Duration: 20 weeks
- Location: Mölndal, Sweden

Please send your application to Olle Rosenqvist, orosenqvist@thorlabs.com