Control Engineer

INTRODUCTION

Nearfield Instruments (NFI) brings together the most creative minds in science and technology to develop a revolutionary high throughput atomic force microscopy system enabling atom-scale resolution 3D metrology at industry-level throughput, based on three pillars:

- Unrivaled measurement speed;
- Parallelization capability;
- Advanced measurement modes.

At NFI, we design, develop, integrate, market and service these advanced metrology machines, which enable our customers - the world's leading chipmakers – to increase the production yields, and thus, functionality of their microchips, which in turn leads to smaller, more powerful consumer electronics. We aim to develop leading edge metrology systems, to be installed at the customer site, within specifications, on time, with quality exceeding the customer's expectations.

WHAT WILL YOU BE DOING?

As a Control Engineer at NFI, you will be responsible for developing and improving critical controllers and other algorithms for various modules in high throughput AFM Metrology systems, to enhance performance, increase reliability, and increase automation. You will work on systems involving high-speed, high accuracy mechatronics and scanning stages with sub-nanometer precision. You will need to consider system modeling and physics, signal properties (noise, filtering, frequency content), actuator and sensor behaviors and limitations, nonlinear coupled and time-varying plant dynamics, and very large data sets. You will use a range of techniques and methodologies starting with classical and modern feedback control methods, and including advanced control, signal processing, estimation, optimization, frequency-domain analysis, stochastics, and clear logical thinking.

You will collaborate with systems engineers, software and firmware developers, electrical engineers, hardware designers, and project management to develop concepts, perform engineering analysis and design, build and test prototypes, generate detailed requirements, and guide the final algorithms through final implementation, into testing, and out to field production. You will report directly to the CTO.

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WHAT DO WE REQUIRE OF YOU?

The candidate we seek ideally has sufficient experience as a control engineer in a working environment which, in terms of complexity, is in line with that of NFI. Experience in the field of semiconductor equipment is a plus. Furthermore, you need to recognize yourself in the profile as described below.

Requirements:

- A PhD or M.Sc. in Engineering or Physics;
- Specialization in control systems;
- Experience with Linear systems, feedback control, discrete-time control, signal processing, filtering and estimation, system identification, and non-linear systems postgraduate courses and experience will be highly regarded;
- Good MATLAB and Python skills and experience;
- Simulink skills are required with ideally some subset of FEA, CAD, Thermal and other modeling tools;
- Experience designing practical discrete-time feedback control systems of significant complexity
- Ability to design and analyze feedback control and estimation systems using classical, modern or nonlinear techniques and theories;
- Ability to translate, statistically analyze data, and effectively report problems through written and/or graphical formats;
- Ability to carry a product design from conception into production;
- Working knowledge of C/C++ desirable;
- Understanding of embedded software systems desirable;
- Be able to quickly acquire technical knowledge from documentation and on-the-job training, and be capable of thoroughly investigating technical issues (analytically and hands-on in a lab or cleanroom environment);
- Strong written and oral communication skills and a commitment to achieving results on time;
- You have a good command of the English language, both written and spoken.

HAS THIS VACANCY AROUSED YOUR INTEREST?

Then please feel free to apply on this vacancy! Nearfield Instruments offers an exciting, fast-paced working environment where you will be able to shape the system and the company.
For further questions don't hesitate to contact us.

Send your application to:

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