Thesis Idea for IAS-Lab
Who we are?

“We are a young company, focused on the development and application of mathematical models and advanced scientific software for the optimal solution of engineering problems.”

“We combine Engineering, Math and Computer Science to solve the most challenging problems around.”
What we do?

• Numerical Simulation
• Scientific Software development
• Model & Algorithm development
• Numerics & HPC
• Data Analysis & Machine Learning
Computer Vision for Civil Protection

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Introduction
M3E has been selected for the POR FESR project “Computer Vision for Civil Protection”, a R&D project supported by EU & Regione del Veneto to develop Computer Vision based algorithms to detect the inception of Landslides, and help to reduce the Hydrogeological risk.

During the project, real time images will be acquired by two cameras located in the so called ‘Frana Fantoni’ (VI - Italy), in order to monitor the evolution of the landslides thanks to the acquired images.

Objectives:
The aim of the Thesis is to develop an algorithm able to reconstruct the 3D scene, using mainly stereophotogrammetrical techniques, and subsequently compute the displacements between sequences of images, defining thresholds in order to assess the risk of failure.

Project partners:
M3E, Dalla Gassa, EPC Consulting, University of Padua.

You will learn to:
• Develop algorithms for stereo images process
• Use Python & C++ for image processing
• Collaborate with a team of technicians
• Prepare Project Reports and Slide Deck in English

Requirements:
• Basic knowledge of Python and C++

> Hiring possibilities after the thesis!
Deep Learning for Predictive Manufacturing

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Introduction

M3E has been selected as member of ImproveNet, an Innovation Network involving top firms from industry, such as Electrolux, Santex Rimar, Galdi, etc. and has been involved in PreMani project, a collaborative research initiative to develop predictive models based on Machine Learning for increase product quality and reduce failures, in the spirit of Industry 4.0.

During the project, several real time data will be collected from machineries, and the data will be used to create data driven models, able to identify anomalous conditions in the production plant.

Objectives:

The aim of the Thesis is to develop algorithms able to forecast time series, using Deep Neural Networks endowed for example with LSTM and GRU layers, and use the algorithms to identify anomalous pattern in the time series.

Project partners:

ImproveNet – Innovation Network

You will learn to:

• Develop Machine Learning & Deep Learning algorithms for time series predictions.
• Collaborate with a team of technicians.
• Prepare Project Reports and Slide Deck in English.

Requirements:

Basic knowledge of Data Science and Python

> Hiring possibilities after the thesis!
More Info?

Please shot us an e-mail, we will be honored to invite you for a coffee!

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