



● Università
● degli Studi
della Campania
Luigi Vanvitelli

Scuola Politecnica e
delle Scienze di Base
Dipartimento di Ingegneria

AVVISO DI SEMINARIO

per il Corso di

Sistemi Distribuiti

LM Ingegneria Informatica

e per i Corsi di Dottorato in

INGEGNERIA INDUSTRIALE E DELL' INFORMAZIONE

Ed AMBIENTE, DESIGN ED INNOVAZIONE

Il 6 Giugno 2019, alle ore **16:30** presso l'**Aula del Consiglio** della Scuola, sita in via
Roma n. 29 – Aversa

Prof. Giulio Iannello

Facoltà Dipartimentale di Ingegneria - Università Campus Bio-Medico di Roma

terrà un seminario su:

TeraTools: experiences in developing software for ultra-terabyte image processing

State-of-the-art microscopes, coupled with chemical clearing procedures to render brain tissue transparent can generate 3D images of terabyte size at high throughput. Processing and manipulation of these images require new software tools to perform a number of functions from stitching, to visualization, to annotation, to analysis. In 2012 we developed TeraStitcher, a stitching software capable to deal with terabyte-sized images currently being used by many labs around the world. Since then we have constantly improved TeraStitcher in many respects, and developed other tools providing powerful visualization, annotation, and automated image analysis capabilities on terabyte-sized datasets. In this talk I will discuss the design choices that made TeraStitcher and the other tools successful in dealing with ultra-terabyte images. I will discuss the strategies and the algorithms used to minimize computing resource requirements, and how the internal software architecture of the tool allowed us to extend its capabilities to deal with different image acquisition systems, different image formats and increasing image sizes. The latter issue motivated us to introduce parallelization of some steps of the stitching pipeline, as well as the use of CUDA to exploit the computing capabilities of graphic cards.

Il Docente Prof. Rocco Aversa