



UNIVERSITÀ DEGLI STUDI DI NAPOLI
FEDERICO II



PHD STUDENT FABRIZIO TAVANO

TOPIC 1: DEVELOPMENT OF CONVOLUTIONAL NEURAL NETWORK AND FINGERPRINTING SYSTEM FOR AUTOMATED RAILWAY DAMAGE DETECTION USING MAGNETIC FLUX LEAKAGE TECHNOLOGY

TOPIC 2: DEVELOPMENT OF AN EFFICIENT STRATEGY TO LEAD A TEAM OF ROBOT WORKING FOR THE SANIFICATION OF THE RAILWAY STATIONS

TUTOR: PROF LIPPIELLO VINCENZO

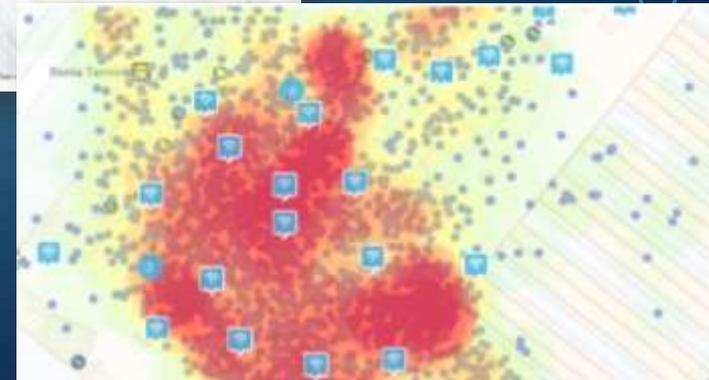
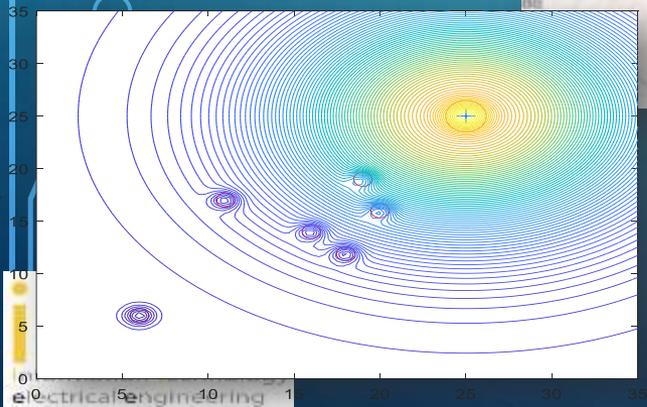
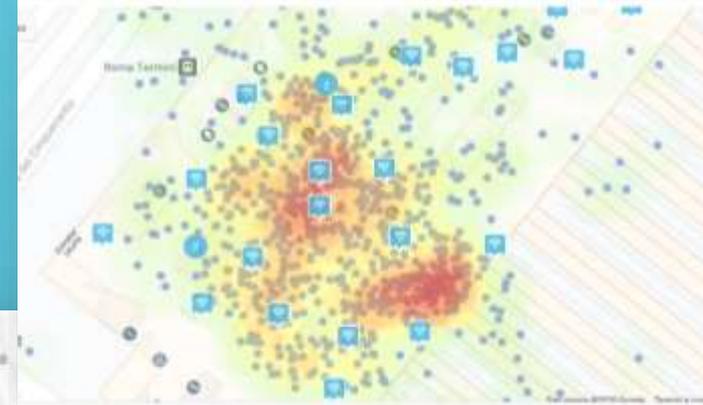
CYCLE: XXXV

YEAR: 2020

MY BACKGROUND

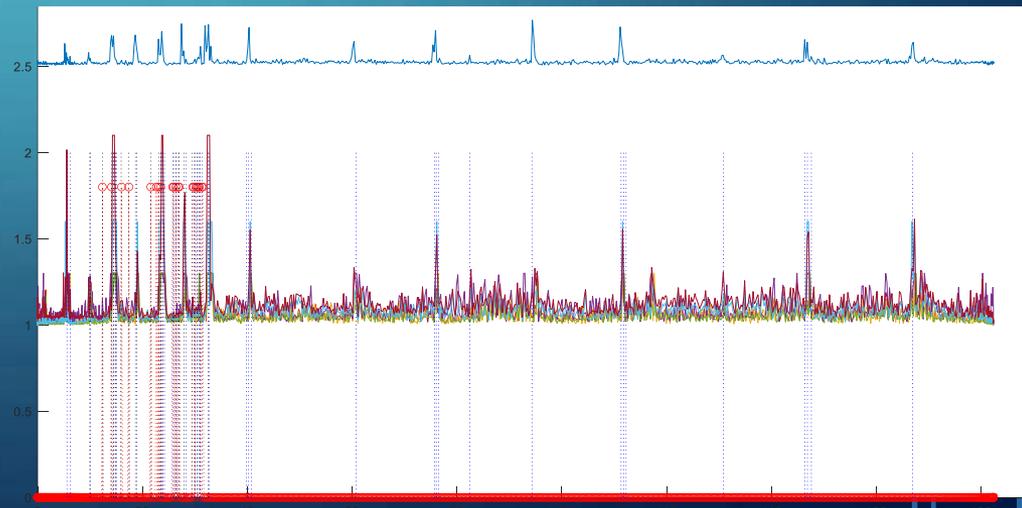
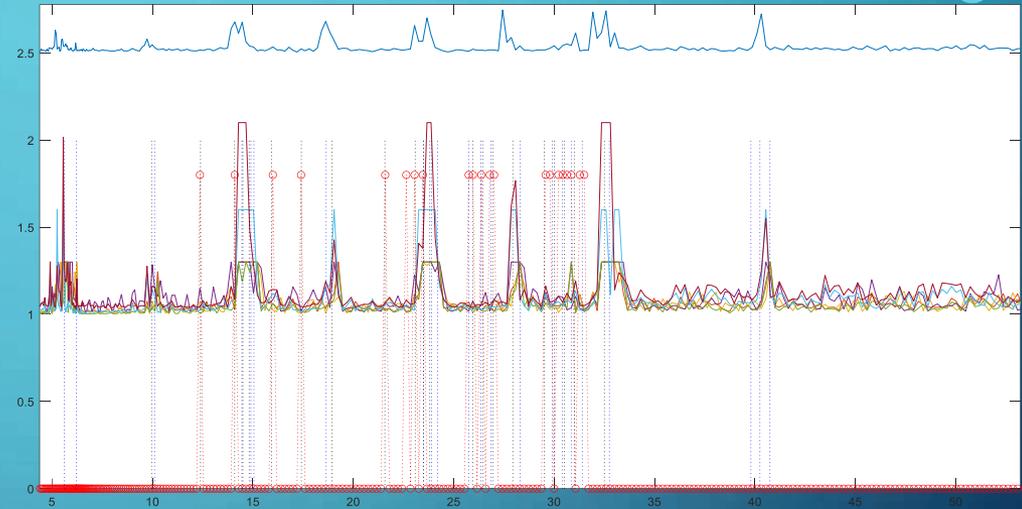
- **PhD student: Fabrizio Tavano**
- **DR number: DR993890**
- **Date of birth: 29/08/1981**
- **Master Science degree: Electronic Engineering University: Second University of Naples**
- **Doctoral Cycle: XXXV**
- **Scholarship type: *no scholarship***
- **Tutor: Prof. Lippiello Vincenzo**

DEVELOPMENT OF AN EFFICIENT STRATEGY TO LEAD A TEAM OF ROBOT WORKING FOR THE DISINFECTION OF THE RAILWAY STATIONS



DEVELOPMENT OF CONVOLUTIONAL NEURAL NETWORK AND FINGERPRINTING SYSTEM FOR AUTOMATED RAILWAY DAMAGE DETECTION USING MAGNETIC FLUX LEAKAGE TECHNOLOGY

Image not available because the prototype is in phase of patenting



FIRST PUBLICATION ABOUT THIS STUDY

in Preparation:

Authors: Fabrizio Tavano & Alessandro Paolo Daga, Luigi Garibaldi, Aldo Canova, Alessandro Fasana, Vincenzo Lippiello, Bruno Siciliano, Riccardo Caccavale, Eugenio Fedeli, Vincenzo Calà, Mirko Ermini, Marcella Di Mario, Francesco Giuliano, Franco Stivali, Riccardo Santoro, Fiorella Fedele, (2020).

Title: Development of Convolutional Neural Network and fingerprinting system for automated railway damage detection using Magnetic flux leakage technology.

In process of submission to the journal: **IET Electrical Systems in Transportation**.

Name Surname

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NEXT STEP

Image not available because the prototype in phase of patenting

Name Surname

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SUMMARY OF STUDY ACTIVITIES IN THIS YEAR

Module	Professor
Safety critical System for railway traffic management	Mario Barbareschi
Robotic interaction control	Prof. Siciliano
Field and service robotics,	Prof. Ruggiero
Machine learning	Prof. Sansone
Mathematics of the Finite Element Method	Prof. Calabrò
Robotic lab	Prof. Lippiello
Artificial Intelligence	Prof.ssa Amato

Name Surname

Seminars/Workshop	Organizer
Numerical methods for modelling, simulation and control for softrobots or robots in interaction with deformable environment	Prof. Dr. Fanny Ficuciello
Cybersecurity and Fuzzing for robots, blockchain, and more	Dr. Roberta Natella
"Large Scale Training of Deep Neural Networks	Prof. Carlo Sansone
Exploring Autonomy in Robotic Flexible Endoscopy,	Prof. Dr. Fanny Ficuciello
"Wearable Brain-Computer Interface for Augmented Reality-based Robotic Applications in Industry 4.0"	Prof. Pasquale Arpaia;
AI Webinar Series on Deep Learning	NVIDIA, CINI National Lab, CINECA

STUDY AND TRAINING ACTIVITIES - CREDITS EARNED

	Courses	Seminars	Research	Tutorship	Total
Bimonth 1	0	2.4	7	0	9.4
Bimonth 2	3.3	0.4	10	0	13.7
Bimonth 3	0	0.8	10	0	10.8
Bimonth 4	29	3.6	10	0	42.6
Bimonth 5	3.6	1	10	0	14.6
Bimonth 6	8.6	2.8	10	0	21.4
Total	44.5	11	57	0	112.5
Expected	30 - 70	10 - 30	80 - 140	0 - 4.8	

Name Surname

STUDY ACTIVITIES IN THE NEXT YEAR

Module	Professor
Statistical Machine Learning	Prof.ssa Corazza
Human-Robot Interaction	Prof.ssa Rossi
Robotics Foundations	Prof. Siciliano
Intelligent Robotics	Prof. Finzi
Neural Networks and Machine Learning	Prof. Prevete

Name Surname

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