Vincenzo Lanzetta

Deep learning methods for analysis and prediction of financial data

Tutor: Prof. R. Prevete Cycle: XXXVII

Year: first

My background

- MSc degree: chemistry
- Second MSc degree (to be completed - 4 exams left): statistics
- laboratory: AIPA
- PhD start date: November 1, 2021
- Scholarship type: no scholarship

Research field of interest

Deep learning methods in Finance

Summary of study activities

	Courses	Seminars	Research	Tutorship	Total
Total	21	5.2	33	0	59.2
Expected	20 - 40	5 - 10	10 - 35	0 – 1.6	

- (Some) Ad hoc PhD courses:
  - Machine Learning for Science and Engineering Research
  - Statistical data analysis for science and engineering research
  - Operational Research: Mathematical Modelling, Methods and Software Tools for Optimization Problems
  - Imprenditorialità accademica

- (Some) Events attended:
  - Tutorial on "statistical Learning for sensory and consumer science" (European Conference on Data Analysis)

Research activity: Overview (1/2)

- Problem

  Financial industry demands for new methods aimed at capturing non-linear relationships, in the financial data, for prediction purposes

- Objective

  Development of new deep learning approaches for the financial market prediction

Research activity: Overview (2/2)

- Methodology
  - *Theoretical investigation on deep learning approaches for stock market prediction, on related performance measurements and on statistical methodologies for the validation of the results*
  - *Developing different methods to build financial images (from financial time series prices, from financial technical indicators)*
  - *Developing convolutional architectures, transfer learning-based, to perform stock market prediction*

Next year

- *Writing a review paper on the analyzed deep learning approaches for the financial market predictions*

- *Experimenting the developed convolutional architectures*

Thank you for your attention