



Ispra, 06/09/2023

## **NOTE TO THE FILE**

**Subject:** letter of recommendation Mr. Francesco Bosso

Dear Sir, / Dear Madam,

I am pleased to write a letter of recommendation for Mr Francesco Bosso.

The JRC is the science and knowledge service of the European Commission and carries out research to provide independent scientific advice and support to European Union (EU) policies.

I got to know Francesco in a professional capacity when he worked as a trainee at the European Commission Joint Research Centre in E2 unit ‘Technologies for Space, Security and Connectivity’. Francesco’s application clearly stood out of the field of over many candidates who in many cases had already higher degrees than Francesco (he was competing with candidates with even PhDs). While at the JRC, Francesco assisted in a variety of research projects to exploit Artificial Intelligence methods in the context of the security portfolio:

- Development of JRC report on ”Predicting location of terroristic attacks exploiting Large Language Models”. Given the relevance of the results, we are planning to present this report to the whole Directorate E to demonstrate this as a relevant development on the “*Data for Security*” area.
- Development of JRC report on “JRC Terrorism and Extremism Database - Data Quality Optimisation for Machine Learning”. He contributed to the analysis and writing of a report under the AI-related technical point of view. Furthermore, Francesco developed a framework of three AI-based models able to predict location of terroristic attacks based on data coming from the terrorism database maintained by JRC. These models exploit different AI algorithms (e.g., Transformers, Embeddings) integrated in a wider and more complex pipeline. The developed framework resulted in outperforming the currently used methods and have therefore been deployed in the production environment of JRC
- The two previously mentioned reports and activities have been developed in collaboration with colleagues from another unit (E.3 Safety and Security of buildings), having widely different backgrounds and with slightly different objectives. Francesco was able to manage all these challenges proving to have qualities such as flexibility,

adaptation, ability to work in a widely multidisciplinary scenario, critical thinking and team working.

The successful outcome of Francesco's work in a very short period of time (5 months) also highlights his versatility and willingness to accept challenges. The background of Francesco is indeed related to the application of AI methods to geospatial data. Despite that, he was able to properly exploit Natural Language Processing algorithms and to integrate them in the context of a "*location intelligence*" task by linking the geospatial dimension to the security framework highlighting his mastery of the AI field.

Francesco is an enthusiastic and excellent team player who has demonstrated all the necessary skills and knowledge to meet the challenges of the project. He adapted very fast to the subject of the group and based on his remarkable analytical skills and strong technical background he was able to deliver high quality valuable results. He is very polite and always demonstrated exemplary conduct. He effectively communicated in a multinational professional setting. I was impressed by the intelligent comments he made during team meetings. His open mindedness as well as sharp analytical skills will serve him very well in a career in the AI field.

Yours faithfully,



Dr. Georgios Giannopoulos

Deputy Director Directorate E: Space, Security and Migration

Head of Unit E2: Technologies for Space, Security and Connectivity