



Decree of the Rector n. 1199 of 21/11/2023
Competition for awarding 1 research grant at the University of Udine

DISCLAIMER:

The official and legally binding call for applications is in Italian only. This document cannot be used for legal purposes and is only meant to provide information in English on the call for applications (Decree of the Rector n. 1199 of 21/11/2023). Please refer to the official call published on: <https://www.uniud.it/it/albo-ufficiale>

Any change and integration will be made available on the above mentioned web page. Therefore, no personal written communication regarding the examination date and/or competition results shall be provided to applicants.

Annex 1

Competition announcement for the assignment of 1 research grant at the University of Udine, entitled "Multimedia Understanding meets Social Media Analysis" SSD: ING-INF/05 (principal investigator, Giuseppe Serra)

Research grant co-funded by the resources of the project PRIN 2022 - Prot. n. 2022YTE579

Art. 1

A selection procedure is hereby launched for the award of 1 research grant at the University of Udine, as identified in Attachment A which constitutes an integral part of the present announcement.

The research grant is linked to the research project and is subject and conditioned upon the relative funding.

The fellowship may be renewed, in compliance with Art. 22, Law No. 240 of 30 December 2010 (as in the text in force before the implementation of the Conversion Law of the D.L. 36/2022, L. 79/2022), Law No. 11 of 27 February 2015, and the current regulations of the University of Udine for awarding research grants, issued with the Rector's Decree No. 182 of 31 March 2021. The renewal is subject to the scientific coordinator's positive assessment of the researcher's activities, an adequate scientific rationale, and a corresponding financial covering.

The research fellowship does not give rise to any right with regards to accessing University posts.

Any personal communication to candidates related to this selection will be sent exclusively to the email address indicated when registering for the selection, as mentioned in Art. 5.

Art. 2

The research grant described in this competition announcement and the required qualifications to apply for the position are identified in Attachment A. The lack of the admission requirements leads to the automatic exclusion from the competition procedure.

Possession of a PhD or equivalent degree obtained abroad or, only for the interested areas, of a medical specialization accompanied by an adequate scientific production, constitutes a preferential qualification for awarding the research fellowship of this selection, if it has not been provided as a mandatory requirement.



For the only purpose of the admission to the competition, the Examining Board (Art. 7) shall assess the equivalence of the qualification obtained abroad, except for the evaluation of the medical specialization qualification to which Article 38 of the Legislative Decree 165/2001 and subsequent modifications and additions, and EU regulations on the matter, shall be applied.

The Examining Board will proceed to the evaluation of the qualification obtained abroad according to the documentation attached to the application form. The Examining Board may exclude the candidate if the submitted documentation does not provide sufficient information for the assessment. Therefore, applicants must enclose all the documentation in their possession relating to their qualification in order to provide the Examining Board with sufficient information for assessment.

Candidates holding a qualification issued by a **European Research Area country**, if successful, must submit, if not already attached to the application form one of the following options:

- Supplement Diploma in English issued by the competent University.
- CIMEA Certificate of comparability of the foreign qualification, issued by CIMEA (Information Centre on Academic Mobility and Equivalence) via the "diplome" service at <https://cimea.diplo-me.eu/udine/#/auth/login>

Candidates holding a qualification issued by a **non-European Research Area country**, if successful, must submit, if not already attached to the application form one of the following options:

- Declaration of the on-site value of the qualification and the certificate relating to the degree with examinations and grades. A certificate in a language other than Italian or English must be accompanied by an official translation into one of these languages (certified by the competent diplomatic-consular authority or certified by a court in Italy).
- CIMEA Certificate of comparability of the foreign qualification, issued by CIMEA (Information Centre on Academic Mobility and Equivalence) via the "diplome" service at <https://cimea.diplo-me.eu/udine/#/auth/login>

If the Supplement Diploma or the statement/attestation of comparability are not available when signing the contract, the applicant must demonstrate that he/she has requested the documentation and submit it as soon as possible.

Any exclusion from the selection procedure due to lack of eligibility requirements, absence of required documents, failure to sign the selection application or submission of the selection application in a manner different from what is provided for in this call for applications will be communicated to applicants exclusively at the email address indicated in the application form.

Art. 3

The research grant referred to in this call for applications cannot be awarded:

- a. to employees of Universities and the entities referred to in Article 22, section 1, of Italian Law no. 240 of 30 December 2010 (in the text prior to the reform introduced by Law no. 79 of 29 June 2022);
- b. to those who have already been awarded research grants pursuant to Italian Law no. 240 of 30 December 2010 (prior to the reform introduced by Law no. 79 of 29 June 2022) for the maximum period provided by law, even if not continuously, excluding the period in which the grant was used in conjunction with the doctorate, up to the legal term of the relative course;
- c. to those who have already benefited from research grants and fixed-term researcher contracts provided for, respectively, in Articles 22 and 24 of Italian Law no. 240 of 30 December 2010 (in the



text prior to the reform introduced by Law no. 79 of 29 June 2022), for a total of 12 years, even if not consecutive;

- d. to anyone who has a degree of kinship or affinity, up to and including the fourth degree, with:
- the Rector, the Director General or a member of the Board of Directors of the University of Udine;
 - the scientific supervisor or a professor/researcher belonging to the department or organisation hosting the research grant in question.

The research grant provided for in this call for applications cannot be combined:

- a) with scholarships of any kind, except for those granted by Italian or foreign institutions to supplement, by means of stays abroad, the fellow's training or research activities;
- b) with other research grants;
- c) with an employment relationship, even if part-time, without prejudice to the relevant provisions for employees of public administrations.

The grant awarded under this call for applications is also incompatible with simultaneous attendance at university degree courses, either Bachelor's degree or Master's degree courses, research Doctorates with scholarships and medical specializations, in Italy or abroad.

Art. 4

Applicants must enclose with their application, under penalty of exclusion, the following documents:

- a) their professional scientific CV, highlighting the candidate's aptitude for carrying out and implementing the research project (Attachment A);
- b) their identity card, their passport or any other identification document¹;
- c) (for candidates with a foreign qualification only) certification or self-certification of both the academic qualification required for the admission to the selection, and of the exams (with evaluation) took during the period of study abroad, and of any other document that can be useful to the evaluation of the degree by the Examining Board.

Applicants can attach to the application, publications and any other certification considered useful to demonstrate the qualification based on the research program (Attachment A) and to certify any research activity accomplished at public or private institutes (indicating the starting and ending date and the duration).

The documents and qualifications mentioned above must be submitted in Italian or English. Those that are not as requested will not be evaluated. Documents originally written in a language other than Italian or English must come with a translation in Italian or English, that the candidate will do on its own responsibility. The translation can be an abstract concerning the thesis.

Italian and Community candidates wishing to submit qualifications referring to conditions and facts attested by Public Administrations must proceed exclusively with self-certification.

Non-EU citizens legally residing in Italy may self-certify only data that can be verified or certified by Italian public bodies. They may also use declarations in lieu when provided for by an international convention between Italy and the declarant's country of origin.

Non-EU citizens not residing in Italy cannot self-certify.

Only the qualifications possessed by the candidate on the date the application form is submitted and submitted in accordance with the procedures set out in Article 5 will be assessed.

¹ Please be aware that the residence permit is not an identification document.



Failure to submit mandatory documents provided for in this article will constitute grounds for exclusion from the selection.

Art. 5

The submission of the applications for the present call starts on November 30, 2023 at 2:00 pm (Italian time) and ends on March 19, 2024 at 2:00 pm (Italian time).

The application to take part in the selection must be completed, under penalty of exclusion, using the appropriate online procedure, available at the link <https://pica.cineca.it/>. The procedure involves an applicant registration step, for those who do not already have an account, and then an application completion step.

Once completed, the online application must be signed in the manner described in the online procedure (manual signature with attached identity document or digital signature), under penalty of exclusion from selection. The application does not have to be signed if you access the above-mentioned online procedure using your SPID ID.

The qualifications referred to in Article 4 must be attached to the application in .pdf format. Individual .pdf files may not exceed 30MB.

The application for participation in the selection is automatically sent to the University of Udine with the definitive closing of the online procedure.

The University Administration:

- is not responsible if it is impossible to read the submitted documentation in electronic format due to damaged files;
- shall not accept or take into consideration qualifications or documents received in paper form or by any means other than what is specified in this article.

Reference to documents or publications already submitted in connection with other competitions is not allowed.

The Administration is not responsible for any missing document or communication because of inaccurate indication of residence and/or address submitted by the candidate during the application. Also, the Administration is not responsible if the candidate has not communicated changes in this information, or has communicated them too late. The Administration is also not responsible for any postal or telegraphic problems not attributable to the Administration itself.

Applicants are advised not to wait until the last few days before the closing date to submit their application. The University accepts no responsibility for any malfunctions due to technical problems and/or overloading of the communication line and/or application systems.

Art. 6

The selection procedure is held in accordance with the modality indicated in Attachment A.

The test will aim to assess the general preparation, experience and aptitude for research of the candidate. It will consist in the evaluation of the professional scientific curriculum, of the publications and qualifications presented, and of the interview, where foreseen.



Art. 7

The Examining board for the competition is identified in Attachment A of the present competition announcement, of which it is an integral part.

At its first meeting, the Examining board shall appoint its President and Secretary, and establish the criteria and methods for evaluating the qualifications and the interview, where foreseen.

The results of the qualifications assessment must be disclosed to applicants during the interview, where foreseen.

The Examining board can award a maximum of 100 points (one hundred out of one hundred) to the selection.

At the end of the evaluation procedure, the Examining board shall formulate the general merit list based on the overall score of each candidate, and draw up the minutes of the whole competition procedure.

Based on the ranking list, the assignment is awarded to candidates who have obtained a minimum overall score of 70/100 (seventy out of one hundred).

The Examining board's judgement is final.

The ranking list will be made public exclusively through publication on the University's official website.

Applicants will not be notified of the outcome of the evaluation.

Those who do not declare their acceptance of the research grant and do not present themselves at the research centre within the deadline communicated by the latter, even if not formally, shall lose the right to receive it. Exceptions to this term will only be granted in cases of documented force majeure.

Art. 8

The research activity cannot be started before signing the contract defining the terms and conditions of the collaboration.

The activity covered by the research grant must have the following characteristics:

- a) it must be carried out as part of the research programme covered by the grant and not be a merely technical support to it;
- b) it must have a close connection with the realization of the research program for which the winner of the grant has been awarded the contract;
- c) it must be continuous and, in any case, temporally defined, not merely occasional, and in coordination with the overall activity of the University;
- d) it must be carried out autonomously, solely within the limits of the programme prepared by the programme supervisor, without predetermined working hours.

The researcher is required to submit a detailed written report on the work carried out and the results achieved, accompanied by the opinion of the scientific supervisor, to the reference organisation at the intervals set out in the contract. The researcher must also submit interim reports and timesheets, if requested by the reference organisation.

Either the fellow or the reference organisation may withdraw from the contract.



The reference organisation may terminate the contract not only in the cases referred to in Article 9, sections 2 and 3, of the "Internal rules for awarding research grants pursuant to law 240 of 30 December 2010" of the University of Udine, but also in the event the research project and therefore the financial coverage on which the research grant is based cease to exist.

Art. 9

The following legal dispositions shall apply to the grant referred to in this call for applications:

- for tax matters, the provisions of Article 4 of Italian Law no. 476 of 13 August 1984, as subsequently amended and supplemented;
- for social security matters, the provisions of Article 2(26) *et seq.* of Italian Law no. 335 of 8 August 1995, as subsequently amended and supplemented;
- for mandatory maternity leave, the provisions of the Italian Ministerial Decree of 12 July 2007;
- with regard to sick leave, the provisions of Article 1(788) of Italian Law no. 296 of 27 December 2006 and subsequent amendments.

During the period of mandatory maternity leave, the allowance paid by INPS according to Art. 5 of the Italian Ministerial Decree of 12 July 2007 is supplemented by the University up to the full amount of the research grant.

The grant will be paid in monthly instalments.

Art. 10

The data collected as part of the procedure referred to in Art. 5 are necessary to properly manage the selection procedure, for any subsequent management of the research grant and for purposes related to managing services provided by the University. The University of Udine is the Data Controller. At any time, the data subject may request access, rectification and, depending on the University's institutional purposes, cancellation and restriction of processing or oppose the processing of their data. The data subject can always lodge a complaint with the Italian Data Protection Authority. The complete disclosure is available on the University of Udine website in the "Privacy" section, accessible from the home page www.uniud.it Direct Link: <https://www.uniud.it/it/it/pagine-speciali/guida/privacy>

Art. 11

For all matters not expressly mentioned in this call for applications, refer to the regulations in force on the subject cited in the introduction and to the "Internal rules for awarding research grants pursuant to Italian Law no. 240 of 30 December 2010" of the University of Udine, issued by Rector's Decree no. 182 of 31 March 2021.

Art. 12

The procedure supervisor is Dr Sandra Salvador, Head of the Research Services Area of the University of Udine.

The Responsible office at the University of Udine is "Area Servizi per la Ricerca - Ufficio Formazione per la Ricerca", via Mantica n. 31 - 33100 Udine, Italia.

To request information about the call for applications, please complete the following form available on the University of Udine website:

https://helpdesk.uniud.it/SubmitSR.jsp?type=req&accountId=universityofudine&populateSR_id=42105



Attachment A

Responsabile scientifico della ricerca / Principal investigator:

Nome e cognome / Name and surname: Giuseppe Serra
 Qualifica / Position: Professore Associato / Associate Professor
 Dipartimento / Department: Scienze Matematiche, Informatiche e Fisiche (DMIF) / Mathematics, Computer Science and Physics
 Area MUR / Research field: 09 – Ingegneria industriale e dell'informazione
 Settore concorsuale e Settore scientifico disciplinare / Scientific sector: 09/H1; ING-INF/05 - Sistemi di elaborazione delle informazioni

Titolo dell'assegno di ricerca / Topic of the research fellowship "assegno di ricerca":

I bandi sono consultabili dal sito dell'Ateneo, del MUR e di Euraxess / The calls are available on the University, MUR and Euraxess websites

Testo in italiano:

Analisi dei Social Media attraverso l'integrazione di Sistemi Multimediali.

Text in English:

Multimedia Understanding meets Social Media Analysis.

Obiettivi previsti e risultati attesi del programma di ricerca in cui si colloca l'attività dell'assegnista di ricerca / Foreseen objectives and results of the research programme performed by the research fellow "assegnista di ricerca":

I bandi sono consultabili dal sito dell'Ateneo, del MUR e di Euraxess / The calls are available on the University, MUR and Euraxess websites

Testo in italiano:

<p>Abstract del progetto</p>	<p>I social media sono diventati la piattaforma dominante di comunicazione, con circa 4,62 miliardi di utenti attivi a livello globale. Ciò ha portato a una maggiore richiesta di soluzione per l'elaborazione automatica dei contenuti e il loro monitoraggio. Il riconoscimento delle fake news, della polarizzazione e delle comunità malevoli è diventato di cruciale per monitorare i contenuti online. Gli algoritmi attuali per l'analisi dei social media si basano principalmente su metodi di grafici e reti. Tuttavia, i contenuti online includono ora diverse modalità come testo, immagini e video. Recentemente la comunità di AI ha proposto diversi algoritmi che utilizzano congiuntamente tecniche di Computer Vision (CV) e di Natural Language Processing (NLP) per una più efficiente comprensione del contenuto. Purtroppo, questi progressi sono stati sottoutilizzati nell'analisi dei social media. Il progetto MUSMA mira a cambiare questa situazione sviluppando modelli innovativi che elaborano e comprendono contemporaneamente contenuti testuali e visivi. Il progetto mira a estrarre informazioni rilevanti, individuare informazioni errate e analizzare le dinamiche di consumo delle informazioni utilizzando una combinazione di Network Science, NLP e CV. Il progetto coinvolge team di ricerca riconosciuti a livello internazionale e mira ad avere applicazioni pratiche e industriali aprendo la strada a nuove direzioni di ricerca nell'ambito dell'AI.</p>
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<p>Obiettivi del progetto</p>	<p>MUSMA è un progetto che combina Network Science, Natural Language Processing e Computer Vision per sviluppare strumenti per l'analisi dei social network. Il suo obiettivo è affrontare le sfide nei social media come il topic modeling, la polarizzazione e la rilevazione delle informazioni errate. Il progetto ha tre obiettivi principali: 1) estrarre e comprendere i contenuti rilevanti dai social media utilizzando testo, immagini e video, 2) rilevare i modelli di polarizzazione e le informazioni errate attraverso l'integrazione multimodale, e 3) integrare ed analizzare i dati provenienti da diverse modalità nel tempo per comprendere il flusso delle informazioni. Il progetto prevede la progettazione di algoritmi per l'estrazione dei contenuti, l'analisi dei modelli di polarizzazione e delle informazioni errate e l'integrazione dei dati provenienti da diverse modalità per un'analisi completa. L'attenzione è rivolta alla comprensione dei contenuti condivisi e dei fenomeni a livello di rete nei social media.</p>
<p>Stato dell'arte</p>	<p>I sistemi per l'analisi dei social media condividono caratteristiche comuni condivise: la raccolta di dati entro un determinato periodo di tempo o argomento, la pre-elaborazione e l'analisi dei dati raccolti e la presentazione delle analisi tramite riassunti, rapporti o cruscotti [1]. Sono possibili diversi tipi di analisi, come analisi statistiche sui metadati, analisi di rete e analisi di opinione/sentimento/argomento/tendenza sui contenuti [2-5]. Il testo evidenzia anche aree di ricerca legate alla caratterizzazione dei nodi individuali, all'analisi del sentimento, alla rilevazione di comportamenti come il cyberbullismo e all'uso di dati testuali per prevedere il mercato azionario o gestire crisi mediche. Vengono discusse la rilevazione delle informazioni errate, i meccanismi di diffusione delle informazioni e l'impatto delle camere di risonanza sulle informazioni errate, insieme ad approcci per individuare e smentire i contenuti ingannevoli [6-8]. Viene menzionata la sfida dei contenuti multimodali falsi, in particolare i deepfake, e viene sottolineata la necessità di tecniche in grado di rilevare vari tipi di manipolazioni. Il testo conclude presentando MUSMA, un approccio proposto per l'analisi dei social media che combina la comprensione automatica dei dati multimodali e la struttura della rete, sfruttando i recenti progressi nella comprensione dei dati uni-modalità e multimodalità.</p>
<p>Descrizione del progetto</p>	<p>MUSMA è un progetto che mira a sviluppare un nuovo paradigma computazionale per l'analisi dei contenuti dei social media. Combina approcci tradizionali basati su reti con i progressi nella comprensione multimodale dei contenuti. La convergenza delle comunità di ricerca in Network Science, Natural Language Processing e Computer Vision sta guidando questo progetto. Tra i fattori che contribuiscono a questa convergenza vi sono la disponibilità di contenuti web su larga scala per la comprensione dei social media, il ruolo unificante del Deep Learning nella gestione di diverse modalità di dati e il miglioramento della qualità degli algoritmi di comprensione multimediale e delle reti sociali. Mentre l'integrazione di Natural Language Processing e Computer Vision per i dati multimodali è una direzione di ricerca popolare, MUSMA esplora anche l'integrazione con Network Science, proponendo un approccio unificato per migliorare l'analisi dei social media.</p>



<p>Possibili potenzialità applicative</p>	<p>Il progetto MUSMA si propone di affrontare le sfide dei social media, come la disinformazione, le camere di risonanza e la polarizzazione, fornendo al contempo spunti preziosi per scopi scientifici, tecnologici e socio-economici. Da un punto di vista scientifico, il progetto coinvolge una collaborazione interdisciplinare per avanzare nella scienza delle reti, la comprensione di testi, immagini e video e l'apprendimento profondo. L'obiettivo è sviluppare componenti all'avanguardia e un quadro olistico che contribuisca alla comunità scientifica e offra un approccio completo all'analisi dei social media. Dal punto di vista tecnologico, il progetto enfatizza la disponibilità dei suoi risultati, inclusi codice, dataset e moduli, per le parti interessate per ulteriori utilizzi e sviluppi. Dal punto di vista socio-economico, MUSMA mira ad aiutare gli utenti a consumare contenuti accurati, a sensibilizzare sulla disinformazione e ad assistere le aziende nella comprensione delle tendenze e nell'interazione con la loro base utenti per strategie di marketing efficaci.</p>
<p>Bibliografia</p>	<ol style="list-style-type: none"> 1. S Stieglitz et al, Social media analytics – Challenges in topic discovery, data collection, and data preparation, IJIM, 2018 2. H Norman et al, Exploring the Roles of Social Participation in Mobile Social Media Learning: A Social Network Analysis, IRRODL, 2015 3. K Jindal and R Aron, A systematic study of sentiment analysis for social media data, Mater Today Proc, 2021 4. Y Wang and B Li, Sentiment Analysis for Social Media Images, ICDMW, 2015 5. M Paolanti et al, Visual and Textual Sentiment Analysis of Brand-Related Social Media Pictures Using Deep Convolutional Neural Networks, ICIAP, 2017 6. BAH Murshed et al, DEA-RNN: A Hybrid Deep Learning Approach for Cyberbullying Detection in Twitter Social Media Platform, IEEE Access, 2022 7. S Tuarob et al, DAViS: a unified solution for data collection, analyzation, and visualization in real-time stock market prediction, Financ Innov, 2021 8. PH Barros et al, Analyzing Social Network Images with Deep Learning Models to Fight Zika Virus, ICIAR, 2018

Text in English:

<p>Abstract</p>	<p>Social media has become the dominant communication platform, with approximately 4.62 billion active users globally. This has led to an increased demand for automatic processing and monitoring of communication patterns. Detecting misinformation, polarization, and malicious communities is crucial for identifying hoaxes and monitoring online content. Current social media analysis algorithms primarily rely on graph and network methods. However, online content now includes various modalities like text, images, and videos. The convergence of Computer Vision (CV) and Natural Language Processing (NLP) enables multi-modal understanding and retrieval. Unfortunately, these advancements have been underutilized in social media analysis. The MUSMA project aims to change this by developing innovative models that process and understand textual and visual content simultaneously. The project</p>
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	seeks to extract relevant information, detect misinformation, and analyze information consumption dynamics using a combination of Network Science, NLP, and CV. The project involves internationally recognized research teams and aims to have practical and industrial applications while paving the way for new research directions in AI.
Objectives of the project	MUSMA is a project that combines Network Science, Natural Language Processing, and Computer Vision to develop tools for social network analysis. It aims to address challenges in social media such as topic modeling, polarization, and misinformation detection. The project has three main goals: 1) extracting and understanding relevant content from social media using text, images, and videos, 2) detecting polarization patterns and misinformation through multi-modal integration, and 3) integrating and analyzing data from multiple modalities over time to understand information flow. The project involves designing algorithms for content extraction, analyzing polarization patterns and misinformation, and integrating data from different modalities for comprehensive analysis. The focus is on understanding shared content and network-level phenomena in social media.
State of the art	Common features shared by social media analysis tools include data collection within a specified time frame or subject, preprocessing and analysis of the collected data, and presenting the analyses through summaries, reports, or dashboards [1]. Different types of analyses can be performed, such as statistical analyses on metadata, network analyses, and opinion/sentiment/topic/trend analyses on content [2-5]. The text also highlights research areas related to individual node characterization, sentiment analysis, detection of behaviors like cyberbullying, and the use of textual data for predicting the stock market or handling medical crises. Misinformation detection, information spreading mechanisms, and the impact of echo chambers on misinformation are discussed, along with approaches for detecting and debunking misleading content. The challenge of fake multimodal content, particularly deepfakes, is mentioned, and the need for techniques capable of detecting various types of manipulations is emphasized. The text concludes by introducing MUSMA, a proposed social media analysis approach that combines automatic understanding of multimodal data and network structure, leveraging recent advances in uni-modal and multimodal data understanding.
Project description	MUSMA is a project that aims to develop a new computational paradigm for analyzing social media content. It combines traditional network-based approaches with advancements in multimodal content understanding. The convergence of research communities in Network Science, Natural Language Processing, and Computer Vision is driving this project. Factors contributing to this convergence include the availability of large-scale web content for understanding social media, the unifying role of Deep Learning in handling different data modalities, and the improved quality of multimedia and social network understanding algorithms. While the integration of Natural Language Processing and Computer Vision for multimodal data is a popular research direction, MUSMA also explores the integration with Network Science, proposing a unified approach for enhancing social media analysis.



Possible application potentialities	The MUSMA project aims to address the challenges of social media networks, such as misinformation, echo chambers, and polarization, while providing valuable insights for scientific, technological, and socio-economic purposes. From a scientific perspective, the project involves interdisciplinary collaboration to advance network science, text, image, and video understanding, and deep learning. The goal is to develop state-of-the-art components and a holistic framework that contribute to the scientific community and offer a comprehensive approach to social media analysis. Technologically, the project emphasizes the availability of its outputs, including code, datasets, and modules, to interested parties for further use and development. Socio-economically, MUSMA aims to help users consume accurate content, raise awareness of misinformation, and assist companies in understanding trends and engaging with their user-base for effective marketing strategies.
References	<ol style="list-style-type: none"> 1. S Stieglitz et al, Social media analytics – Challenges in topic discovery, data collection, and data preparation, IJIM, 2018 2. H Norman et al, Exploring the Roles of Social Participation in Mobile Social Media Learning: A Social Network Analysis, IRRODL, 2015 3. K Jindal and R Aron, A systematic study of sentiment analysis for social media data, Mater Today Proc, 2021 4. Y Wang and B Li, Sentiment Analysis for Social Media Images, ICDMW, 2015 5. M Paolanti et al, Visual and Textual Sentiment Analysis of Brand-Related Social Media Pictures Using Deep Convolutional Neural Networks, ICIAP, 2017 6. BAH Murshed et al, DEA-RNN: A Hybrid Deep Learning Approach for Cyberbullying Detection in Twitter Social Media Platform, IEEE Access, 2022 7. S Tuarob et al, DAViS: a unified solution for data collection, analyzation, and visualization in real-time stock market prediction, Financ Innov, 2021 8. PH Barros et al, Analyzing Social Network Images with Deep Learning Models to Fight Zika Virus, ICIAR, 2018

Struttura dell'Università di Udine presso la quale verrà sviluppata l'attività di ricerca / Department or other structure of the University of Udine where research activities will be carried out:

Dipartimento di Scienze Matematiche, Informatiche e Fisiche (DMIF) / Department of Mathematics, Computer Science and Physics.

Importo dell'assegno di ricerca (al lordo oneri carico assegnista) / Total grant gross for the research fellowship:

€ 19.367,00

Durata dell'assegno di ricerca / Duration of the research fellowship "assegno di ricerca":

12 mesi / months



Finanziamento / Financed by:

La copertura finanziaria graverà sui fondi/progetto:

- Risorse d'Ateneo: bando interno finanziamento assegni 2023 (D.R. n. 406/2023);
- Progetto PRIN 2022 – “MUSMA: Multimedia Understanding meets Social Media Analysis”; Prot. n. 2022YTE579. Decreto di finanziamento n. 959 del 30/06/2023 - Settore PE6. Codice CUP G53D23002930006. Ministero dell'Università e della Ricerca (Finanziato dall'Unione Europea, NextGenerationEU).

Requisiti di ammissione / Minimum qualifications necessary:

- Possesso di un diploma di laurea vecchio ordinamento (ante decreto 3 novembre 1999 n. 509) o di laurea specialistica/magistrale (ex decreto 3 novembre 1999 n. 509 e decreto 22 ottobre 2004 n. 270) o titolo equivalente conseguito all'estero;
- possesso di un curriculum scientifico professionale idoneo allo svolgimento dell'attività di ricerca contemplata.
- University degree obtained before Decree n. 509 of 3 November 1999 or specialistic/Master's degree (post decree n. 509 of 3 November 1999 and decree n. 270 of 22 October 2004) or equivalent degree obtained abroad;
- professional scientific curriculum suitable for the research activity above mentioned.

Procedura selettiva / Competition procedure:

Valutazione per titoli e colloquio / Evaluation of titles and oral exam

I risultati della valutazione dei titoli saranno resi noti agli interessati nel corso del colloquio / The evaluation of the qualifications will be disclosed to candidates during the interview

Calendario del colloquio / Calendar of the oral exam	Modalità / Modality	Videoconferenza / Videoconference
	Data / Date	28 marzo / March 2024
	Ora / Time	13:00 / 1:00 pm (Italian time)
	Luogo / Place	-

Per sostenere il colloquio i candidati devono esibire un valido documento di riconoscimento. / Candidates must come to the interview with a valid identity document.

Eventuali variazioni saranno rese note esclusivamente mediante pubblicazione all'albo ufficiale on line dell'Ateneo / Any change will be made public solely through publication on the University web site http://web.uniud.it/ateneo/normativa/albo_ufficiale

Nota / Note: Le indicazioni sulle modalità di svolgimento della prova in modalità telematica saranno inviate ai candidati con successiva email da parte del Presidente della Commissione. Ai fini dell'identificazione e a pena di esclusione dalla procedura selettiva, ciascun candidato è tenuto ad identificarsi prima che il colloquio abbia inizio, esibendo il medesimo documento di identità allegato alla domanda di ammissione al concorso. Il candidato deve risultare reperibile nella giornata e all'orario indicato sul bando. Il mancato collegamento, l'irreperibilità del candidato nel giorno o nell'orario stabilito o la mancata esibizione del documento identificativo, sono motivo di esclusione dalla procedura selettiva. La registrazione delle prove orali è vietata. L'Ateneo adotterà pertanto tutti i



provvedimenti in suo potere per tutelare i soggetti coinvolti qualora venissero diffuse tramite internet – o altri mezzi di diffusione pubblica – video, audio o immagini della procedura selettiva. / Instructions on how the video interviewing will be conducted will be provided to candidates by the Chairman of the Examining Board via email. For identification purposes, each candidate is required to identify him/herself before the interview by exhibiting the same identification document attached to the application. Candidates must be available on the day and time established by the call for applications. Failure of the candidate to establish a video connection, the unavailability of the candidate on the day and/or time established or failure of the candidate to provide the required identification document are all grounds for exclusion from the selection procedure. Recording of the video interviews is prohibited. The University will adopt all the measures within its power to protect all personnel involved as a result of dissemination via the internet or via other forms of public dissemination, of videos, audios or other pictures of the selection procedures.

Commissione giudicatrice / Examining Board:

Nome e Cognome	Qualifica	SSD	Università
Membri Effettivi / Permanent members			
Giuseppe Serra	PA	ING-INF/05	Università degli Studi di Udine
Vincenzo Della Mea	PA	ING-INF/05	Università degli Studi di Udine
Stefano Mizzaro	PO	ING-INF/05	Università degli Studi di Udine
Membro Supplente / Temporary member			
Niki Martinel	PA	INF/01	Università degli Studi di Udine