

NOTICE

Bucharest University of Economic Studies organizes the selection for the following post:

Post-doctoral researcher 4 - 1 post in the project „*JobKG – A Knowledge Graph of the Romanian Job Market based on Natural Language Processing*”, **project number 178/31.07.2023**

Part-time 80 hours/month unevenly distributed, gross hourly pay 120,75 lei, to 30 June 2026.

A. In order to enter the selection, candidates need to fulfil the following general and specific conditions:

1. General conditions:

- a) has Romanian citizenship, citizenship of other member states of the European Union, of states belonging to the European Economic Area and/or foreign states as defined by art 2 lit. a) of GEO 194/12.12.2002 with subsequent amendments and completions, respectively persons who do not have Romanian citizenship, citizenship of another EU member state or citizenship of the Swiss Confederation;
- b) minimum age stipulated by law;
- c) has full capacity;
- d) meets the conditions of education and, where appropriate, seniority or other specific conditions in accordance with the requirements of the post to be filled;
- e) has not been convicted of a crime against humanity, against the State or against authority, or of an offence committed in the course of or in connection with the performance of his or her duties which obstructs the course of justice, or of forgery or corruption, or of an offence committed with intent which would make him or her incompatible with the performance of his or her duties, unless he or she has been rehabilitated.

2. Specific conditions:

- a) level of studies: higher education, PhD diploma completed
- b) area of studies: economy, business administration, cybernetics and statistics, economic informatics, finance, statistics or similar
- c) Mandatory condition: *The candidate must hold a doctoral degree and have research experience of no more than 8 years full time equivalent, from the date of obtaining the first doctoral degree, and, but not exceeding 10 years full time equivalent under the conditions laid down by the European Research Executive Agency (REA).*

The date of obtaining the first doctoral degree is calculated according to the date of the call.

*In the case of this selection process, the date of obtaining the first doctoral degree (the date of the minister's order) should **not be prior to 15.09.2014.***

d) Other specific conditions:

Responsibilities:

- Conduct research and development in the field of energy finance, focusing on the interdependency of energy and financial markets.
- Collaborate with interdisciplinary teams, including economists, policymakers, and industry experts, to provide insights and guidance for decision-making in energy finance and policy formulation.
- Publish research findings in reputable academic journals and present at conferences/workshops.
- Contribute to quantinar.com and the social media strategy of the research project.

Requirements:

- A Ph.D. degree in a relevant field such as computer science, applied mathematics, statistics, finance, or a related discipline.
- Strong expertise in machine learning, artificial intelligence, and data analysis techniques.
- Extensive knowledge of energy finance, including understanding the interdependency between energy and financial markets.
- Proficiency in programming languages such as Python (preferred) or R.
- Strong analytical and problem-solving abilities.
- Good communication and collaboration skills to work effectively within a multidisciplinary team.

B. Selection will consist of:

Step 1 - Evaluation of the files submitted by the candidates;

Step 2 - Structured interview:

- date and time of the interview: will be communicated concurrently with the results of the evaluation of the files submitted by the candidates;
- place of the interview: will be communicated simultaneously with the results of the evaluation of the files submitted by the candidates.

The samples are eliminatory, the minimum score to be obtained for each sample is 50 points.

C. Subject area and bibliography:

1. Subject area:

- a. Innovation
- b. Artificial intelligence
- c. Digital business models
- d. Labor and society
- e. Digitization and the future of jobs
- f. Semantic technologies and Big Data for modeling the Romanian job market
- g. Multidisciplinary approaches for understanding the labor market in Romania
- h. Qualitative and quantitative analysis, based on statistical analysis and data analysis;

- i. Agent-based modeling.
- j. Data-based "what-if" prediction models for simulating the labor market in Romania.

2. Bibliography:

1. CEDEFOP, 2019. Artificial or human intelligence? Digitalisation and the Future of Jobs and Skills: opportunities and risks. <https://doi.org/doi/10.2801/862703>
2. de Groot, M. , Schulte, J. , Graus, D. , 2021. Job Posting-Enriched Knowledge Graph for Skills-based Matching.
3. Deloitte, 2018. Preparing tomorrow's workforce for the Fourth Industrial Revolution.
4. Devlin, J., Chang, M.-W., Lee, K. , Toutanova, K., 2019. BERT: Pre-training of Deep Bidirectional Transformers for Language Understanding, in: Proceedings of the 2019 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies, Volume I (Long and Short Papers). Presented at the NAACL-HLT 2019, Association for Computational Linguistics, Minneapolis, Minnesota, pp. 4171=4186. <https://doi.org/10.18653/v1/N19-1423>
5. Dumitrescu, S., Avram, A.-M., Pyysalo, S. , 2020. The birth of Romanian BERT, in: Findings of the Association for Computational Linguistics: EMNLP 2020. Presented at the Findings 2020, Association for Computational Linguistics, Online, 43244328. <https://doi.org/10.18653/v1/2020.findings-emnlp.387>
6. Market Accounting for Workers' Stocks and Gross Flows. *Comput Econ* 50, 21—68. <https://doi.org/10.1007/s10614-016-9577-0>
7. Goyal, N. , Sachdeva, N. , Choudhary, V. , Kar, R. , Kumaraguru, P. , Rajput, N. , 2019. Con2KG-A Large-scale Domain-Specific Knowledge Graph, in: Proceedings of the 30th Acm Conference on Hypertext and Social Media (Ht '19). Assoc Computing Machinery, New York, pp. 287-288. <https://doi.org/10.1145/3342220.3344931>
8. Hamill, L., Gilbert, N., 2016. Agent-Based Modelling in Economics, 1st edition. ed. Wiley, Chichester, UK ; Hoboken, NJ.
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10. Kant, J.-D., Ballot, G., Goudet, O., 2020. WorkSim: An Agent-Based Model of Labor Markets. *JASSS* 23, 4. <https://doi.org/10.18564/jasss.4396>
11. Khaouja, I., Kassou, I., Ghogho, M., 2021. A Survey on Skill Identification From Online Job Ads. *IEEE Access* 9, 118134-118153. <https://doi.org/10.1109/ACCESS.2021.3106120>
12. le Vrang, M., Papantoniou, A., Pauwels, E., Fannes, P., Vandenstein, D., De Smedt, J. , 2014. ESCO: Boosting Job Matching in Europe with Semantic Interoperability. *Computer* 47, 57—64. <https://doi.org/10.1109/MC.2014.283>
13. Peter Elias, 1997. Occupational Classification (ISCO-88): Concepts, Methods, Reliability, Validity and Cross-National Comparability (OECD Labour Market and Social Policy Occasional Papers No. 20), OECD Labour Market and Social Policy Occasional Papers. <https://doi.org/10.1787/304441717388>
14. WEF, 2017. Accelerating Workforce Reskilling for the Fourth Industrial Revolution.
15. World Bank, 2016. World Development Report 2016: Digital Dividends.
16. Yao, K., Zhang, J., Qin, C., Wang, P., Zhu, H., Xiong, H., 2022. Knowledge Enhanced

Person-Job Fit for Talent Recruitment, in: 2022 IEEE 38th International Conference on Data Engineering (ICDE 2022). IEEE Computer Soc, Los Alamitos, pp. 3467—3480. <https://doi.org/10.1109/ICDE53745.2022.00325>

17. Zhang, M., Jensen, K., Sonniks, S., Plank, B., 2022. SkillSpan: Hard and Soft Skill Extraction from English Job Postings, in: Proceedings of the 2022 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies. Presented at the NAACL-HLT 2022, Association for Computational Linguistics, Seattle, United States, pp. 4962—4984. <https://doi.org/10.18653/v1/2022.naacl-main.366>

D. Contents of the competition file:

Composition of the dossier to be submitted by candidates:

1. Opis;

2. Application for the recruitment and selection process addressed to the Rector of ASE;

3. Declaration on own responsibility if the candidate has/does not have a husband/wife or relatives and affines, up to the III-th degree inclusively, who are employees of the Academy of Economic Studies of Bucharest in a position of leadership, control, authority with the post taken out for selection and not the post, to which they apply, is not in a position of leadership, control, authority with husband/wife or relatives and affines, up to and including III degree, employees of the University;

5. Statement for the processing of personal data;

6. Copy of the identity document or any other document attesting the identity, according to the law, as the case may be;

7. Copy of marriage certificate or proof of name change, if the candidate changed his name (proof of name change);

8. The criminal record or a self-declaration that it has no criminal record that makes it incompatible with the position for which it is applying;

9. Medical certificate attesting the appropriate health status issued no more than 6 months prior to the selection by the family doctor of the candidate or by the competent medical units, or, or the declaration on its own responsibility, with the obligation to fill in the selection file with the medical certificate at the latest by the date of the first test of the recruitment and selection process, if applicable;

10. Curriculum vitae in European format (www.cveuropean.ro/cv-online.html) – signed and dated on each page;

11. Copy of the graduation diploma of the faculty;

12. Copy of the master's degree;

13. Copy of the doctor's degree;

14. Possible copies of other documents/acts (if the candidate owns), attesting to the performance of professional specializations/training, certifying the fulfillment of the other specific conditions provided for the occupation of the post, which are referred to in Chapter A, point 2, point d).

E. Contact information:

Applications will be submitted by 02.07.2024, until 10:00 AM, at the UES Registrar's Office.
Contact person: university lecturer dr. Caraiani Petre – e-mail: petre.caraiani@fabiz.ase.ro.

F. Selection calendar:

No.	Activities	Date
1.	Submission of candidates' applications to ASE Registrar and check of documents in the applications	25.06.2024-02.07.2024, until 10:00 a.m.
2.	Assessment of applications by the committee	02-03.07.2024
3.	Posting the results of the applications assessment	04.07.2024
4.	Submission of appeals about the results in applications assessment	05.07.2024
5.	Posting the results of resolving appeals	08.07.2024
6.	Interview	09.07.2024
7.	Communicating results following the interview	10.07.2024
8.	Submission of appeals about the results of the interview	11.07.2024
9.	Posting the results of resolving appeals	12.07.2024
10.	Posting final results of selection	15.07.2024
11.	Appointment	After approval from the Board of Trustees