Dr. BELKACEM Sami

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Education

2021-present	**Assistant Professor of Computer Science** **Option:** Artificial Intelligence **Language:** English **Teaching activities:** Programming, OOP, Data Structures & Algorithms, Database, Introduction to AI	*National Higher School of Artificial Intelligence*	*Algiers*
2016-2021	**Ph.D. in Computer Science** **Option:** Artificial Intelligence **Thesis title:** "Machine learning approaches to rank news feed updates on social media" **Languages:** English, French	*USTHB*	*Algiers*
2019-2020	**PROFAS B+ Doctorate mobility in Computer Science** **Option:** Artificial Intelligence **Languages:** English, French	*University of Lyon 2*	*France*
2018-2019	**Erasmus Doctorate mobility in Computer Science** **Option:** Artificial Intelligence **Language:** English	*University of Algarve*	*Portugal*
2014-2015	**Master's degree in Computer Science** **Option:** Artificial Intelligence **Master's thesis entitled:** "Friend recommendation on social media - A case study of Yelp"	*USTHB*	*Algiers*
2011-2013	**Bachelor's degree in Computer Science** **Bachelor's thesis entitled:** "Management of commercial documents in the Algeria Airlines company	*USTHB*	*Algiers*
June 2010	**Baccalaureate in Natural & Life Sciences**	*Mohamed Hadjeres High School*	*Algiers*

Computer skills

Office and website technologies: Excel, Word, PowerPoint, LaTeX, Beamer, Overleaf
Operating systems: Linux, Windows XP, Windows Vista, Windows 7, Windows 8, Windows 10
Programming language: Python, Java, C, C++, PHP, HTML, MATLAB, Delphi, Fortran, Pascal, Shell, Assembly
Databases: UML, SQL, MySQL, SQL*Plus, Oracle, Databases management, Databases architecture and administration, Advanced databases
Artificial Intelligence: Machine learning, Kaggle (data science platform), Keras (deep learning library), Weka and Scikit-Learn (machine learning software and library), Pandas and Numpy (data preparation tools), Matplotlib (data visualization tool), Reinforcement learning, Natural language processing, Time series, Knowledge representation and reasoning, Problem solving, Metaheuristic, Computer vision, Data mining, Expert systems, Multi-agent systems
Other: Recommender systems, Social media analysis and mining, Tweepy (Python library to collect data on Twitter), Jupyter Notebook, Google Colab, Computer networks, Computer security, Information systems, Graph theory, Formal language, Software engineering, Functional programming, Compilation, Information retrieval, Analysis of algorithms, Constraint programming, Modeling and evaluation of computer systems

Language skills

Language	Speaking	Writing	Certification
Arabic	Mother Tongue	Mother Tongue	-

French	Fluent	Fluent	Test de connaissance du français (TCF) Niveau C2 (623 points / 699 points)
English	Very good command	Very good command	-

Personal interests

Sports activities: football, fitness, jogging, cycling

Other: volunteering, reading, cinema, music, internet, video games, new technologies, computer programming

Certifications and Awards

2013: Software developer trainee in the IT Systems Department of the Algeria Airlines company

June 2018: African Machine Learning Summer School (http://mlschool.org/algiers2018/), Algiers, Algeria

2018: scholarship award from the European Union exchange program Erasmus, University of Algarve, Portugal

2019: scholarship award from the French-Algerian cooperation program PROFAS B+, University of Lyon 2, France

June 2020: Virtual Home Camp entitled: "Algerian Artificial Intelligence Home Camp"

January 2022: Certified professional training by *Huawei* entitled "HCIP- Artificial Intelligence-EI Developer"

Developed software programs (non-exhaustive list) https://github.com/SamBelkacem

COVID-19 Data Analysis and Time Series Forecasting: Algeria and the World (Python + Scikit-Learn): machine learning tool that allows to analyze COVID-19 data and predict the number of new cases/deaths.

Ranking news feed updates (Python + Scikit-Learn + Keras): software that predicts the relevance of tweets and ranks the news feed updates of *Twitter* users in descending relevance order.

Friend recommendation on social media (Python + Java): software that allows to create explicit and implicit profiles of *Yelp* users, identify groups of users, and facilitate exchanges between them by recommending other individuals with similar profiles and relatively close needs.

Sentiment analysis on *Twitter* (Python + Scikit-Learn): machine learning model to preprocess, analyze, and predict the sentiment and polarity of tweets (negative, positive, neutral) on *Twitter*.

Natural Language Processing (Python): software that vocalizes Arabic texts using Natural Language Processing techniques and a corpus extracted in a programmed way from the Internet.

Information retrieval tools (Python): search engines that allow, from a query that expresses the user's information needs, to find all textual documents that contain the information sought.

Constraint programming software (Java): implementation for discrete binary CSPs of the *Look-Ahead* algorithm with an instantiation of variables with a domain value, and filtering during the search with the AC3 arc consistency procedure.

Computer vision tools (C++): mean filter, median filter, morphological filters, detecting and tracking moving objects, face detection and recognition using *OpenCV* functions.

Data Mining software (Java): implementation of the two algorithms *K-means* and *Apriori* and their experimentation on the data provided in the file *HEART_Stat*. The latter is a dataset of 270 observations specifying patient medical records.

Knowledge representation and reasoning tools (Matlab + C): logical inference using a *SAT* solver, fuzzy control systems, and Bayesian causal networks.

Multi-agent system (Java): A multi-agent system for a virtual car selling and buying market where cognitive agents interact in a part of the business process, from the search for products to automatic negotiation.

Compilation tools (C): mini-compiler of the C programming language, mini-compiler of the *Fortran* programming language**.**

Artificial neural network software (Matlab): studying the existential relationship and predicting the impact of some health and economic factors (number of doctors per person, number of health infrastructures, GDP/Capita, etc.) on life expectancy in Algeria.

Metaheuristic (Java): software that searches for solutions in a space search using exact and approximate methods applied to the N-Queens problem.

Computer security (C): software that encrypts messages using linear encryption and decrypts messages using statistical attacks.

Software that manages commercial documents of the Algeria Airlines company (MySQL + Java): software that allows commercial agents of the Algeria Airlines company to have a global view and better management (add, update, delete, search, etc.) concerning airline tickets and other documents.

Tennis tournament management software (Java): tournament management includes: the registration of players and clubs, the annual declaration of tournaments, the organization of tournament matches, and the display of both player and tournament results.

Dictionary (C): software that allows managing (add, update, delete) a set of words and checking whether a specific word belongs to the set. If the word is found, its definition and synonyms will be displayed.

Analysis of algorithms (Java): development of several searching/sorting algorithms and study of their complexity.

Scientific publications

Journal papers

1. Sami Belkacem, Kamel Boukhalfa, and Omar Boussaid, Expertise-aware news feed updates recommendation: a random forest approach, Journal of Cluster Computing, 23(3), 2375-2388, November 2019 DOI: 10.1007/s10586-019-03009-w
   Publisher: Springer
   Indexed in: Web of Science
   Impact factor: 3.458
2. Lamia Berkani, Sami Belkacem, Mounira Ouafi, and Ahmed Guessoum, Recommendation of users in social networks: A semantic and social based classification approach, Journal of Expert Systems, Volume 38, Issue2, September 2020, DOI: https://doi.org/10.1111/exsy.12634
   Publisher: Wiley Online Library
   Indexed in: Web of Science
   Impact factor: 1.546
3. Sami Belkacem and Kamel Boukhalfa, Ranking News Feed Updates on Social Media: A Review and Expertise-Aware Approach, International Journal of Data Warehousing and Mining (IJDWM), Volume 17, Issue 1, January 2021, DOI: 10.4018/IJDWM.2021010102
   Publisher: IGI Global
   Indexed in: Web of Science
   Impact factor: 0.727

4. Sami Belkacem, COVID-19 Data Analysis and Forecasting: Algeria and the World, Preprint, May 2020, arXiv:2007.09755.

Conference papers

1. Sami Belkacem, Kamel Boukhalfa, and Omar Boussaid. News feeds triage on social networks: A survey. In Proceedings of the 2nd International Conference on Computing Systems and Applications (CSA), pages 34–43, December 13-14, 2016, Algiers, Algeria.

2. Sami Belkacem, Kamel Boukhalfa, and Omar Boussaid, Tri des actualités sociales: État de l'art et Pistes de recherche, EDA – Conference on Business Intelligence & Big Data, May 03-05, 2017, Lyon, France. vol. RNTI-B-13, pp.85-100.

3. Sami Belkacem, Kamel Boukhalfa, and Omar Boussaid, Leveraging expertise in news feeds: A Twitter case study, EDA – Conference on Business Intelligence & Big Data, October 04-06, 2018, Tanger, Morocco. vol. RNTI-B-14, pp.1-16.

4. Sami Belkacem, Omar Boussaid, and Kamel Boukhalfa, Ranking news feed updates on social media: A comparative study of supervised models, EGC - Conference on Knowledge Extraction and Management, January 27-31, 2020, Brussels, Belgium, vol. RNTI-E-36, pp.499-506.

5. Sami Belkacem, Kamel Boukhalfa, and Omar Boussaid, Ranking social media news feeds: A comparative study of Personalized and Non-Personalized prediction models, The 2nd International Conference on Artificial Intelligence and its Applications (AIAP2021), January 24-26, 2022, El-Oued, Algeria, DOI: 10.1007/978-3-030-96311-8_19

Presentations, workshops, and scientific seminars

1. **May 2016**: Presentation entitled: "Ranking news feed updates: A survey". Presented at the third doctoral days of the Computer Systems Laboratory, at USTHB University, Algiers, Algeria.

2. **March 2017:** Presentation entitled: "Content recommendation on social media: A Survey and Open Issues". Presented at a seminar of the ISI team (Computer Systems Laboratory), at USTHB University, Algiers, Algeria.

3. **April 2018:** Presentation entitled: "Leveraging expertise in news feeds: A *Twitter* case study". Presented at a workshop on Resource Management in Cloud Computing, at Algiers University, Algiers, Algeria.

4. **June 2019:** Presentation entitled: "New and fun ways to improve your English". Presented at a weekly English seminar, at USTHB University, Algiers, Algeria.

5. **October 2019:** Presentation entitled: "Machine learning approaches to rank news feed updates on social media". Presented at a monthly seminar of the ERIC laboratory, at University of Lyon 2, Lyon, France.

6. **March 2020:** Presentation entitled: "Let's Talk Artificial Intelligence", Presented at an online digital conference, organized by Algerian and Egyptian students/PhD students in Artificial Intelligence.

7. **October 2020:** Presentation entitled: "My Erasmus Experience", Presented at the Erasmus days at USTHB University, Algiers, Algeria.

8. **January 2021:** Online podcast entitled: "Artificial Intelligence Research in Algeria", Presented with four other Algerian PhD students in Artificial Intelligence.

9. **June 2021:** Online podcast entitled: "Machine learning approaches to predict the relevance of news feed posts on social media", organized by the YouTube channel « Moubachir Silicon Valley », https://www.youtube.com/watch?v=KBu70oz6LbY

10. **December 2022:** Workshop entitled "Introduction to Programming with Python", organized with the Google Developer Student Club, at the National School of Artificial Intelligence, Algiers, Algeria.

11. **May 2023:** Presentation entitled: "Recommender Systems: An Overview", at the National School of Artificial Intelligence, Algiers, Algeria: https://ensia.edu.dz/the-week-of-artificial-intelligence/

12. **June 2023:** Workshop entitled "Data cleaning, visualization, and analysis", Hackathon AiFEST'23 organized by the Google Developer Student Club, at the National School of Artificial Intelligence, Algiers, Algeria.

Supervision of research activities

2016-2017: Supervision with my P.h.D tutor of a Master thesis project in Computer Science at USTHB University, Algiers, Algeria. Master's thesis entitled: "Intelligent approach to rank news feed updates on social media".

Research project

2020-2024: Member of the PRFU project INDEX (INtegrating External Data to improve decision-making systems), LSI laboratory, USTHB, Algiers, Algeria.

Review for scientific events

Reviewer and member of the program committee of the 1st International Conference on Artificial Intelligence: Theories and Applications (ICAITA22), November 07th - 08th 2022, Mascara, Algeria, https://www.univ-mascara.dz/icaita22/

Scientific events I attended (non-exhaustive list):

1. **May 2016:** Tutorial entitled: "How to conduct the Ph.D. project". Presented by Pr. Kamel BOUKHALFA at USTHB University, Algiers, Algeria.

2. **April 2017:** Tutorial entitled: "How to write and publish papers in scientific journals". Presented by Pr. Hocine ZEROUG at USTHB University, Algiers, Algeria.

3. **April 2018:** Workshop entitled: "Writing for top Journals". Presented by Pr. Athman BOUGUETTAYA at the National High School of Computer Science, Algiers, Algeria.

4. **2018-2019:** Weekly English seminars at USTHB University, Algiers, Algeria, the topic is different every week.

5. **2019-2020**: Weakly Computer science seminars at Lyon 2 University, France, the topic is different every week

6. **January 2020**: Workshop entitled: "Machine Learning Days", at Lyon 1 University, Lyon, France.