Dr Naila Marir

Computer Science Department

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SUMMARY

Dr. Naila Marir is an Assistant Professor in the Computer Science Department at Effat University. She earned her PhD in Computer Science and Technology from Harbin Engineering University, China, and specializes in artificial intelligence and cybersecurity. Her research integrates Data-Centric AI, Federated Learning, and Big Data Analytics to enhance cybersecurity through Generative AI and Deep Learning methodologies. Dr. Marir's work advances deep learning techniques for network security, addressing challenges in data integrity and system resilience. She also investigates Natural Language Processing and Sentiment Analysis to deepen our understanding of human language in practical applications. Committed to ethical AI, her research prioritizes privacy and the development of secure, scalable solutions that align with modern security demands. Moreover, her extensive publications and conference presentations have contributed significantly to the academic discourse in AI and cybersecurity. She actively collaborates with interdisciplinary teams to bridge theoretical insights and practical implementations.

EDUCATION

Ph.D. in Computer Science (2015-2019)

Harbin Engineering University, CHINA

College of Computer Science and Technology.

Thesis title: Research on Abnormal Behavior Detection Techniques Based on Big Data Analytics.

Chinese language (2014-2015)

Harbin Engineering University, CHINA

College of International Cooperative Education

Master's in Computer Science (2012-2014)

University of Skikda, ALGERIA

College of Science. Computer Science and Technology

Specialization: Engineering of Distributed Systems

Thesis title: Intrusion Detection System using Paxos Consensus based on Multi-agent Systems.

Bachelor's in Mathematics and Computer Science (2009-2012)

University of Skikda ALGERIA

College of Science. Mathematics and Computer Science

Specialization: Computer Networks and Distributed Systems

Senior Project: Design and development of a network simulation tool

TEACHING EXPERIENCE

Assistant Professor   (August 2024-Present)

Computer Science Department, Effat College of Engineering

Effat University

Associate Professor   (November 2023-2024)

Faculty of New Technologies of Information and Communication

Abdelhamid Mehri - Constantine 2 University

Assistant Professor   (November 2021-2022)

Faculty of New Technologies of Information and Communication

Abdelhamid Mehri - Constantine 2 University

COURSES TAUGHT

- Machine Learning
- Data Preprocessing (Data-centric AI)
- Business Intelligence (BI)
- Algorithmic and Data Structures
- Introduction to Computing
- Senior Project I-II

- Statistics and Data Analysis
- Cyber Security
- Information Security
- Operating Systems
- Text Mining and Natural Language Processing
- Principles of computers (Python)

ADMINISTRATIVE EXPERIENCE

Scientific Engagement and Industry Partnerships   (2023- 2024)

In charge of scientific activities and relations with the social and economic sector, Abdelhamid Mehri - Constantine 2 University Faculty of New Technologies of Information and Communication.

Head of the AI Division at FABLAB (2022- 2024)

AI Cell at FABLAB Abdelhamid Mehri - Constantine 2 University.

FabLab Foundation Member   (2022- 2024)

Abdelhamid Mehri - Constantine 2 University

PROFESSIONAL EXPERIENCE

Member, Hardware Equipment Selection Committee (2024)

Description: Collaborated with a team to select and procure hardware equipment for the AI lab ensuring compatibility with project requirements and budget constraints.
Participated in vendor negotiations and equipment testing to guarantee quality standards were met.

Member, eLearning Committee (2023)

Description: Contributed to the development and implementation of eLearning strategies and initiatives. Collaborated with colleagues to integrate technology into teaching practices, enhance online learning experiences, and promote digital literacy among students and faculty.
Participated in the selection and evaluation of eLearning tools and platforms.

Internship in Sonatrach Skikda (2012)

Computer Science Department. Skikda, Algeria.

RESEARCH EXPERIENCE

Fields of Specialization: Artificial Intelligence, Cybersecurity, Generative AI, Big Data Analytics, Natural Language Processing (NLP)

Current Research Areas/Topics: AI in Specific Domains: Healthcare AI, Energy AI, Cyber security AI, Education AI and AI-driven Systems, Natural Language Processing and Sentiment Analysis, IoT Security, Malware Generation and Detection Techniques

Researcher (2022-Present)

Lire Laboratory (focuses on Distributed Computing Research): Covering different areas of computer science, including system architectures, software engineering and AI, distributed systems, and information systems, data science and databases.
Research Team: Data Intelligence

Research Affiliate (January. 2024)

Effat University, Effat College of Engineering

Reviewer

- IEEE Access
- VECoS 2023: International Conference on Verification and Evaluation of Computer and Communication Systems
- Journal of King Saud University - Computer and Information Sciences
- The second International Conference on New Technologies of Information and Communication, Mila, Algeria
- The 12th Seminary of Computer Science Research at Feminine, Constantine, Algeria

CONFERENCES AND EVENT ORGANIZATION

• **Organizing Committee**, L&T 2025, The 13th Learning and Technology, Effat University

• **Organizing Committee**, RIF 2024, The 13th Seminary of Computer Science Research at Feminine, University of Constantine 2 - Abdelhamid Mehri

• **Organizing Committee Member**, ICAASE 2024, The 6th International Conference on Advanced Aspects of Software Engineering, University of Constantine 2 – Abdelhamid Mehri

• **Organizing Committee Member**, L&T 2024, The 21st International Conference on Learning and Technology, Effat College of Engineering, Effat University, Jeddah, KSA (2023-24)

• **President** of the organizing committee of the "Salon De L'Informatique, 7th Edition" event 2023, University of Constantine 2 - Abdelhamid Mehri

• **Organizing Chair Member**, RIF 2023: The 12th Seminary of Computer Science Research at Feminine, University of Constantine 2 - Abdelhamid Mehri

• **Organizing Committee Member**, TACC 2022: Tunisian-Algerian Joint Conference on Applied Computing, University of Constantine 2 - Abdelhamid Mehri

• **Organizing Committee Member**, ICAASE 2022: International Conference on Advanced Aspects of Software Engineering, University of Constantine 2 - Abdelhamid Mehri.

GRANTS AND FELLOWSHIPS

Research Project Grant: 2024-2025: Effat Internal Grant "Leveraging Distributed Deep Learning Techniques for Fine- grained Aspect Sentiment Analysis in MOOC Learners' Reviews", Dr Akila Sarirete Effat University, Dr Naila Marir Effat University and Pr Fouzia Benchikha Abdelhamid Mehri - Constantine 2 University.

AWARDS AND HONORS

• 2023: Machine Learning Trainer Certificate, University of Constantine 2

• 2023: Enterprise Security with Elastic XDR Training Certificate, the University of Constantine 2 - Abdelhamid Mehri

• 2022: Ethical Hacking Trainer Certificate, University of Constantine 2 – Abdelhamid Mehri

• 2019: IEEE ICKII 2019 Best Paper Award "International Conference on Knowledge Innovation and Invention"

• 2015: Second Grade Award from College of International Cooperative Education, Harbin, China.

• 2014: Scholarship from the Ministry of Higher Education and Research, Algeria, for a Ph.D. degree in Computer Science.

• 2014: Scholarship from the Chinese Government Scholarship Council (CSC), China, for a Ph.D. in Computer Science.

• 2014: Top Student Award from the University of Skikda, Algeria.

• 2012: Top Student Award from the University of Skikda, Algeria.

THESIS SUPERVISIONS

Ph.D. Dissertation Co-Supervision:

• Integration of Socially Generated Content into an Information Retrieval System (IRS)

- Supervisor: Prof. Benchikha Fouzia
- Co- Supervisor: Dr. Naila Marir

• Privacy Preserving Deep Learning for Cough Covid Detection

- Supervisor: Prof. Farid Marir
- Co- Supervisor: Dr. Naila Marir

Master Dissertation Supervision:

- Deep Learning Based Approach for Sentiment Analysis of MOOC Learner Reviews
- Malware Generation and Detection System Based on GAN AI
- Enterprise AI Platform
- Distributed Intrusion Detection System In IOT

Master Dissertation Co-Supervision:

- MOOC Analytics System
- Scientific Reviewer Recommendation Based on Machine Learning Techniques
- Scientific Journal Recommendation Based on Machine Learning Techniques
- Scientific Reviewer Recommendation Based on Big Data Analytics

Bachelor's Projects

Many projects for undergraduate students related to Secure online examination systems and Competitive learning platform for computer science technical challenges.

PROFESSIONAL MEMBERSHIPS

IEEE Member since January 2025.

COMMUNITY SERVICES

Keynote Speaker, AI Awareness Event for High School Students, Constantine, (2024)

- Delivered keynote speech on AI fundamentals and applications, including cybersecurity.
- Engaged students in discussions and demos to inspire interest in AI.
- Provided guidance on AI and cybersecurity careers and education paths.

Keynote Speaker, AI in Research, Effat University, Jeddah, (2024)

- Delivered a keynote speech at Effat University on the pivotal role of AI in research, with a specific focus on the research direction of KSA.
- Shared insights on how AI is transforming research methodologies and accelerating discoveries.
- Inspired attendees to leverage AI in their research endeavors, emphasizing ethical considerations and best practices.

Keynote Speaker, Paradigm Shift in Data-Centric AI, Effat University, Jeddah, (2024)

- Delivered a keynote speech on the paradigm shift in data-centric AI, highlighting its impact on research and industry.
- Engaged with the audience to explore opportunities and challenges in adopting data- centric AI approaches.

Organizer, Cybersecurity Day Event, Constantine, (2024)

- Coordinated and participated in organizing a Cybersecurity Day event to raise awareness about cybersecurity threats and best practices.
- Collaborated with industry experts to develop engaging workshops and presentations on cybersecurity.
- Engaged participants in discussions and activities to promote cybersecurity awareness and education in the community.

Keynote Speaker, AI Workshop for Student Clubs, Constantine, (2023)

- Led interactive workshops on AI concepts and applications tailored for student clubs.
- Provided hands-on experience with AI tools and technologies.
- Inspired students to explore AI in their club activities and projects.

Keynote Speaker, Web application security, Constantine, (2022)

- Delivered a keynote speech on web application security, focusing on emerging threats and best practices.
- Shared insights on the importance of securing web applications in today's digital landscape.

Keynote Speaker, AI Projects Showcase at FabLab, Constantine, (2022)

- Demonstrated how AI can be used to solve real-world problems and enhance innovation.
- Inspired FabLab participants to explore AI and its potential impact on their projects

RELEVANT SKILLS

Programming Languages:

Java, Python (extensively used in AI, Cybersecurity applications, and Data analytics), JavaScript, and C++, reflecting a strong foundation in programming necessary for developing advanced cybersecurity solutions and AI models.

Big Data Technologies:

Apache Spark, Hadoop, and MapReduce, strong expertise in handling big data analytics, processing, and research in Data-Centric AI and Big Data Analytics.

Cybersecurity and Network Security:

A solid foundation in cybersecurity principles, supported by the involvement in projects focusing on network security, federated intrusion detection systems, and AI-driven malware generation, using programming skills for security automation and anomaly detection.

Deep Learning Frameworks:

PyTorch, TensorFlow, Keras, and DL4J, in generative AI, deep learning, and the development of privacy-preserving deep learning techniques.

Database Management:

Proficient in Oracle, MySQL, MongoDB, supporting data management needs in various projects and research activities, including those related to Business Intelligence (BI) applications.

Business Intelligence (BI):

Proficient in PowerBI, RapidMiner, and Talend, demonstrated through teaching Business Intelligence (BI) courses and practical experience in utilizing BI tools for data visualization and analysis.

Secure Coding and System Hardening:

Secure coding practices and familiarity with Unix, Linux and Windows systems within the Operating Systems and research in cybersecurity.

Cloud and Distributed Computing:

Experience with cloud services and distributed computing architectures, essential for the federated learning projects and other research endeavors that require scalable and secure computing environments.

Research and Analytical Tools:

Proficient use of Python and R for statistical data analysis, supporting extensive research in areas like sentiment analysis, abnormal behavior detection, and more.

PUBLICATIONS

- Samia Bousalem, Fouzia Benchikha and Naila Marir, "Personalized Learning Through MBTI Prediction: A Deep Learning Approach Integrated With Learner Profile Ontology," in *IEEE Access*, vol. 13, pp. 30861-30873, 2025.
- Aicha Boubekeur, Fouzia Benchikha and Naila Marir. Sentiment Prediction for Social Information Retrieval: A Comparative Study of Machine Learning and Deep Learning Approaches. In the Proceedings of the International Conference on Emerging Intelligent Systems for Sustainable Development (ICEIS), 2024.
- Aicha Boubekeur, Fouzia Benchikha and Naila Marir. Enhancing Film Discovery through Social Media Traces Using Sentiment Analysis and Machine Learning Combined Approach. L&T 2024. Jeddah, KSA. 2024.
- Özaltın Öznur, Abdulhamit Subasi, Naila Marir, Brahimi Tayeb and Sarirete, Akila. Risk Detection of Breast Cancer from MRI Images Using Deep Feature Extraction and Fine-Tuning NCA Feature Selection. 2024. Big Data. (Under Revision)
- Marir Naila, Wang Huiqiang, et al. Distributed Abnormal Behavior Detection System Based on Deep Learning Techniques: A Spark Based Approach and a Comparative Evaluation. IEEE Transactions on Network and Service Management. (Accepted with revision).
- Marir Naila and Wang Huiqiang. Next-Generation Abnormal Behavior Detection System Based on Big Data Analytics and Deep Learning Techniques. Mathematical Modelling for Big Data Analytics. Elsevier Edited Book. (Accepted)
- Bousba Sara, Marir Naila and Aibeche Aissa. A Non-iterative Sampling Technique to Inverse Elastic Source Problems. In The National Conference on Mathematics and Applications, NCMA 2023, Setif, Algeria. 2023.
- Bousba Sara and Marir Naila. Inverse Problems in Emerging Technology. In: CEUR workshop proceedings, The 12th Seminary of Computer Science Research at Feminine, RIF 2023, Constantine, Algeria. 2023, 3616, 93-101
- Belbekri Adel, Bechikha Fouzia, Slimani Yahya and Marir Naila, SocialNER2.0: A Comprehensive Dataset for Enhancing Named Entity Recognition in Short Human- Produced Text [J]. Intelligent Data Analysis. 2024, 1-25. (IF=1.7, JCR1, 2023).
- Lakhdara Zakaria and Marir Naila. A Formal Modelling Language for Digital Electronic Systems Design. In IEEE International Conference on Advanced Aspects of Software Engineering, ICAASE 2022, Constantine, Algeria. 2022
- Marir Naila, Wang Huiqiang, et al. Unsupervised Feature Learning with Distributed Stacked Denoising Sparse Autoencoder for Abnormal Behavior Detection using Apache Spark. In: IEEE International Conference on Knowledge Innovation and Invention 2019, Seoul, Korea (South). 2019, 473-476.
- Marir Naila, Wang Huiqiang, et al. Distributed Abnormal Behavior Detection Approach based on Deep Belief Network and Ensemble SVM using Spark. IEEE Access. 2018, 6: 59657- 59671. (SCI, WOS:000450189700001) (IF=3.745, JCR1, 2019)

- Marir Naila, Wang Huiqiang. A Cooperative Abnormal Behavior Detection Framework Based on Big Data Analytics[C]. ICPCSEE Communications in Computer and Information Science, Springer, Singapore. 2017,192-206. (EI,20174004223023).

REFERENCES

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