CURRICULUM VITAE of

Nader Yasser Bakir



Lebanese, Date of birth 01 June 1979, Married.
Assistant Professor at Beirut Arab University Researcher in
Image Processing, Cybersecurity using Deep Learning.
Certified ERP System Odoo – Expert in Data Analysis.
PhD in Image and Signal Processing, 2020
INSA Rennes - France

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Scopus: Bakir, Nader - Author details - Scopus
Google Scholar: Nader Bakir - Google Scholar

Education

2017- 2020 **PhD in Image and Signal Processing, Co-direction between LU (Lebanese University) and INSA of Rennes, France Laboratory: IETR (Institute of Electronics and Telecommunication of Rennes), UMR 6164. (Scholarship from Lebanese University)**
Title: Image and Video Light Field Coding (Compression).

2002- 2003 **Master's Degree in Computer Science, Lebanese University in collaboration with Toulouse III University- France.**

1999-2002 **BS Computer Science – Faculty of Science - Lebanese University**

Academic and Teaching Experience

Since 2022 **Assistant professor of Computer Science at Beirut Arab University, Lebanon (BS)**

- Software Engineering
- Database Systems
- Fundamentals of Algorithms
- Digital Circuit
- AI for all
- Applied Artificial Intelligence
- Web Programming
- Artificial Intelligence courses (Machine Learning and Deep Learning in Cybersecurity).
- Introduction to Programming
- Computer Organization & Computers
- Data Structure I and II
- Discrete Structures
- Semantic Web
- Data Mining

2022- 2023 **Assistant professor in Engineering Faculty at Lebanese University- Management Engineering Department, Tripoli Branch (MS)**

- Applied Data Science (SPSS- Power BI- Machine Learning)

2007-2023 **Assistant professor of Business Computer at Faculty of Business, Lebanese University (BS/MS)**

- Multimedia Systems
- Oriented Object Programming
- Computer Essentials

- Data Analysis
- Networks

2009-2016 **Assistant professor of Computer Science, CNAM ISAE Lebanon, Lebanese University**
- Oriented Object Programming

2009-2017 **Assistant professor of Libano-French University (ULF), Faculty of Science**
- Advanced Programming
- Machine Learning
- Data Mining

2018- 2019 **Lab Assistant at INSA of Rennes, France**
- C, C++

2012- 2014 **Lab Assistant at Doctoral School of Science and Technology, Lebanese University, Lebanon**
- Matlab

2018-2023 **Trainer at Campus Numérique de la Francophonie CNF**
- Machine Learning
- Data Analysis
- Deep Learning

Certified Trainer Experience

2023 **Certified ERP System**
Odoo- ERP Systems

2024 **A trainer, in cooperation with the Lebanese Army Command, instructed and trained officers in the Lebanese Army on *Big Data Analysis*.**

2025 **Provided training on Microsoft Power BI for data analysis to staff at the Lebanese Ministry of Energy and Water.**

Since 2021 **Professional Trainer Lebanese Association for Scientific Research (LASER)**
- Web Development (Django)
- Scientific Python

2011-2014 **Certified CNF Trainer**
- Deep Learning
- Machine Learning

Research Experience

2022-2025 **Co-supervisor of Thesis, Beirut Arab University, Lebanon**
Improvement Image Classification and Deep Learning

Since 2026 **Co-supervisor of Thesis, INSA of Rennes, France**
Image Segmentation using Deep Learning

Industry Experience

2022-2023 **Caashpay - France Paris- Senior Developer Python**
Develop an application to manage after-sales services.

2021-2022 **ERP Cloud LLC - Dearborn, Michigan**
ERP Odoo Senior Consultant

2020-2021 **Bander Bafakih Companies Group (DAS-360, Lebanon)**
Team Lead of developers
During two years' work, we developed a system for a national shipping company (using Odoo, Python, and PostgreSQL on a Linux environment) to track its vessels and provide client services via a website. The second project focused on creating a donation system. Both projects were managed using Git and following Scrum/Agile methodologies, often interacting with APIs.

Trainer and Mentor

2022 **Microsoft Power BI**
Laser , Lebanon

2023 **Deep Learning (Artificial Intelligent Course)**
Khwarizme Academy, Lebanon

2023 **Data Analysis**
Khwarizme Academy, Lebanon

2020 **Python for Finance**
Center Mine- Lebanese University

Software Skills

- **AI programming:** TensorFlow, PyTorch, Keras, LLM, Agentic AI,
- **Programming & tools:** Java, Python, R, C#, C++, C, .Net, LATEX, Power BI and Tableau
- **Mobile Programming:** Android Studio.
- **Web Programming:** PHP, HTML, Css, Joomla, WordPress.
- **DataBase:** NOSQL (MongoDB, Cassandra), PostgreSQL, MySQL, SQLite, Access.
- **Virtualization:** Docker, Singularity, VMware, Oracle VirtualBox
- **Operating Systems:** Windows, Linux, OpenMP programming
- **Scientific Programming Software:** MATLAB (+ Simulink).

Publications

International Journals (9)

1. F. Makarem, R. E. Chall, A. E. Samhat, K. Samrouth, and N. Bakir, " Exploiting Vision Transformer and Ensemble Learning for Advanced Malware Classification," *Engineering Reports* 8, no. 1 (2026): e70558, **https://doi.org/10.1002/eng2.70558**.

2. Mahfouz, A., ALMouh, K., Samrouth, K., **Nader Bakir**, BTFA: Behavioral Two Factor Authentication For IAM Systems. Mobile Netw Appl (2026). https://doi.org/10.1007/s11036-026-02515-7

3. **Nader Bakir**, Hilal El Cheikh, Amani Raad, "PyrG: Scene-Adaptive Pyramid Gaussian Splatting for Neural Video Codecs", Submitted, IEEE Transactions on Circuits and Systems for Video

Technology, 2026.

4. Musab Saeed, Khouloud Samrouth, Prathiba Prasad, Vijay Desai, Al-Moutassem Billah Khair, **Nader Bakir**, Zaynab Marhaba ," CognidentHisto: Empowering Oral Histology Education with AI- Powered Mobile Application for Oral Histology Microscopic Image Segmentation and Dataset Augmentation", Culture Scientific – China, Journal.

5. K. Samrouth, Souha Nazir, **Nader Bakir**, Nadine Khodor, "Dual CNN for Photovoltaic Electroluminescence images MicroCrack Detection", *Array* **2025**.

6. S. El Nemar, **N. Bakir**, F. Gehshan, K. Samrouth, D. Vrontis, "Optimizing Airline Services: Leveraging Data-Driven Strategies for Enhanced Customer Satisfaction", Journal of Asia Business Studies, **2025**.
7. M. Asdaque, K. Samrouth, **N. Bakir** "A Survey on Malware Attacks in Industrial Air-Gap Systems", International Journal of Information Security, 2025.

8. Al-Masri, B., **Bakir, N.**, El-Zaart, A., Samrouth, K., "Dual Convolutional Malware Network (DCMN): An Image-Based Malware Classification Using Dual Convolutional Neural Networks", *Electronics* **2024**.

9. **N. Bakir**, W. Hamidouche, Member IEEE, S. Fezza, K. Samrouth, O. Déforges, "Light Field Image Coding Using VVC standard and View Synthesis based on Dual Discriminator GAN", *IEEE Transactions on Multimedia*, **2020**.

- ✓ **International Conferences (21)**

1. "Explainable Odoo's Retail Demand Forecasting Based on Seasonality Using Bi-Directional XML-RPC Interface" accepted in 2nd International Conference on Enterprise and Industrial Systems (ICOEINS 2026), Indonesia.
2. "A Data-Driven Empirical Study of Enterprise Resource Planning (ERP) systems", submitted in Arab Conference on Information, Communication, and Space Technology (ARAB ICST 2026), Egypt.
3. "Distributed Power Analytics: Leveraging Federated Harris Hawks Optimization for Confidential Energy Prediction", accepted in 2026 International Conference on Artificial Intelligence, Systems, and Emerging Technologies (ICAISET), Cairo.
4. "A Gaussian-Based Approach to Video Representation". Accepted in 2025 International Conference on Computer and Applications, Bahrain.
5. Samira El Kassar, **Nader Bakir**, Khouloud Samrouth, Maya Dawood, Rida El Chall, 'Adaptive Client Selection For MRI Reconstruction in Federated Learning', Submitted on 2025 International Symposium on Networks, Computers and Communications (ISNCC), France, August 2025.
6. "AI-Generated Code in Computer Science Education: Boon or Bane?", Accepted in 2025 International Conference on Computer and Applications, Bahrain.
7. Ezzeddine Abou Zahr, Sara Jalloul, **Nader Bakir**, Khouloud Samrouth, 'Simulating a Drone Data Breach: Legal and Technical Incident Response Guided by NIST 800-61', 2025 Sixth International Conference on Advances in Computational Tools for Engineering Applications, July 2025.
8. Samira Al kassar, **Nader Bakir**, Khouloud Samrouth, Maya Dawood, Rida El Chall, "Adaptive Client Selection For MRI Reconstruction in Federated Learning", Submitted, 2025 International Symposium on Networks, Computers and Communications (ISNCC), Paris, France.
9. E. Sokhn, K. Samrouth, **N. Bakir**, "Quantum-Inspired Federated Learning Inference Attacks Prevention", *International Symposium on Digital Security and Forensics (ISDFS)*, Boston, Massachusetts, USA, **2025.**
10. K. Berbery, K. Samrouth**, N. Bakir**, M. Dawoud, "Cyberbullying Dataset Collection for an Enhanced Automatic Detection on Twitter Using Deep Learning Techniques", International Conference on Smart Applications, Communications and Networking (SmartNets), Istanbul**,** 2025.
11. B. Al-Masri, **N. Bakir**, K. Samrouth, and A. Zaart, "Hybrid Residual Attention Network for Image Classification", IEEE International Conference on Control, Automation, and Instrumentation (IC2AI), Lebanon, 2025.
12. H. Morsel, **N. Bakir**, K. Samrouth, P. Vadim, "GAN for MRI Reconstruction in Federated Learning",

IEEE International Conference on Smart Systems and Power Management (IC2SPM), Lebanon, **2024.**

13. G. Francis, M. Sanan, M. Hatoum, **N. Bakir**, K. Samrouth, “Detecting Advanced Persistent Threats on a Network Using Machine Learning”, *IEEE International Conference on Smart Systems and Power Management (IC2SPM)*, Lebanon, **2024.**
14. R. Louis, **N. Bakir**, K. Samrouth, V. Pak, “Towards Secure Federated Learning: Enhancing Privacy and Robustness in Decentralized AI Systems”, *International Conference on Computer and Applications (ICCA),* Egypt, 2024.
15. **N. Bakir**, A. Samrouth, K. Samrouth**,** “PSO-GA Based Federated Learning For Energy Consumption Prediction in Smart Buildings”, *International Conference on Micloelectronics, Artificial Intelligence Track,* Abu Dhabi, **2024.**
16. W. Rayes, K. Samrouth, **N. Bakir**, “Using Blockchain and Vazka Authentication for the Security of Smart Home Devices”, *Arab ICT Conference on Digital Transformation for Sustainable Infrastructure*, Bahrain, **2024**.
17. K. Samrouth, O. Deforges, W. Hamidouche, N. Boeuve, **N. Bakir**, “Ensemble Learning for DeepFake Video Detection”, *International Symposium on Digital Security and Forensics*, San Antonio, Texas, USA, **2024**.
18. **N. Bakir**, W. Hamidouche, O. Déforges, K. Samrouth, and M. Khalil, “Light Field Image Coding Using Dual Discriminator Generative Adversarial Network And Vvc Temporal Scalability”, *IEEE International Conference on Multimedia and Expo (ICME)*, **2020. Nominated for the best paper award.**

19. **N. Bakir,** S. A. Fezza, W. Hamidouche, K. Samrouth, O. Déforges**, "Subjective Evaluation of Light Field** Image Compression Methods based on View Synthesis", *European Signal Processing Conference (EUSIPCO)*, Coruna, Spain, **September 2019**.
20. **N. Bakir**, W. Hamidouche, O. Déforges, K. Samrouth, S. A. Fezza and M. Khalil, "RDO-Based Light Field Image Coding Using Convolutional Neural Networks and Linear Approximation," *Data Compression Conference (DCC),* pp. 554-554, Snowbird, UT, USA, **March 2019**.
21. **N. Bakir**, W. Hamidouche, O. Déforges, K. Samrouth and M. Khalil, "Light Field Image Compression Based on Convolutional Neural Networks and Linear Approximation," *IEEE 25th IEEE International Conference on Image Processing (ICIP),* pp. 1128-1132, Athens, Greece, **October 2018**.

Activities

Football**,** Basketball, Swimming, Ping-pong.