

Nader Yasser Bakir

Lebanese, Date of birth 01 June 1979, Married

Assistant Professor at Beirut Arab University
Researcher in Image Processing using Deep Learning
Certified ERP System Odoo – Expert in Data Analysis
PhD in Image and Signal Processing, 2020
INSA Rennes - France



Contact

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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
 - 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
- 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**
Odo- 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 2024 **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.
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Trainings

- 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
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Software Skills

- **AI programming:** TensorFlow, PyTorch, Keras, LLM.
 - **Programming:** Java, Python, R, C#, C++, C, .Net, LATEX.
 - **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.
 - **Scientific Programming Software:** MATLAB (+ Simulink).
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Publications

✓ International Journals (8)

1. Hilal El Cheikh, **Nader Bakir**, Amani Raad, "PyrG: Scene-Adaptive Pyramid Gaussian Splatting for Neural Video Codecs", Submitted, IEEE Transactions on Circuits and Systems for Video Technology, 2025.
2. Musab Saeed, Khoulood 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.
3. Fawzieh Kassar, **Nader Bakir**, Khoulood Samrouth, Chirine Jneid and Nesrine Atitallah, "Factors affecting employee performance in construction Indus-2 try «Case study: Lebanon»", Submitted, Journal of Big Data and Cognitive Computing , MDPI, 2025.
4. K. Samrouth, Souha Nazir, **Nader Bakir**, Nadine Khodor, "Dual CNN for Photovoltaic Electroluminescence images MicroCrack Detection", accepted with major revisions, *Array* **2025**.

5. 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**.
6. M. Asdaque, K. Samrouth, **N. Bakir** "A Survey on Malware Attacks in Industrial Air-Gap Systems", *International Journal of Information Security*, 2025.
7. 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**.
8. **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 (16)**

1. Samira El Kassar, **Nader Bakir**, Khoulood 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.
2. Ezzeddine Abou Zahr, Sara Jalloul, **Nader Bakir**, Khoulood 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.
3. Samira Al kassar, **Nader Bakir**, Khoulood 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.
4. 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**.
5. 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.
6. 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.
7. 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**.
8. 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**.
9. 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.
10. **N. Bakir**, A. Samrouth, K. Samrouth, "PSO-GA Based Federated Learning For Energy Consumption Prediction in Smart Buildings", *International Conference on Microelectronics, Artificial Intelligence Track*, Abu Dhabi, **2024**.
11. 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**.
12. K. Samrouth, O. Deforges, W. Hamidouche, N. Boeue, **N. Bakir**, "Ensemble Learning for DeepFake Video Detection", *International Symposium on Digital Security and Forensics*, San Antonio, Texas, USA, **2024**.
13. **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**.

14. **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**.
 15. **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**.
 16. **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**.
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Activities

Football, Basketball, Swimming, Ping-pong.