

WORK EXPERIENCE

- **Beirut Arab University**

Assistant Professor of Computer Science

January 2021 - Present

- **Teaching:** Computer Vision, Data Mining, Image Processing, Discrete Structures, Software Engineering, Database Systems, Object Oriented Programming
- **Advising:** average of 80 advisees per year, following up on student registration history, clearance of graduating students
- **Research Supervision:** PhD thesis assistant supervision for three students, Master thesis supervision for three students, supervision of senior projects
- **Service:** member of the university quality assurance committee, head of the faculty quality assurance committee, ABET coordinator for the mathematics and computer science department, EUSEEDS Interreg Nextmed Project contact person

- **Phoenicia University**

Instructor of Computer Science

September 2019 - January 2021

- **Teaching:** Pattern Recognition, Artificial Intelligence, Web Development, Mobile Programming, Database Systems, Introduction to Programming
- **Supervision:** supervision of senior projects and internships

- **American University of Beirut**

Graduate Assistant at the Faculty of Arts and Science

Jan. 2010 – Jul. 2013

- **Tasks:** Deans Office administrative tasks, Automatization of work processes by building excel macros, preparing pivot tables and adding statistical and visualization elements

- **Cleartag**

Intern

Beirut, Lebanon

May - Jul. 2008

- **Web Developer:** front-end and back-end web development, website prototyping

EDUCATION

- **King Abdullah University of Sciences and Technology**

Thuwal, Saudi Arabia

PhD of Science in Computer Science; GPA: 3.86

Sep. 2013 – Aug. 2018

- **Dissertation Title:** Urban Image Analysis with Convolutional Sparse Coding
- **Defense Date:** May 21st, 2018
- **PhD Adviser:** Prof. Peter Wonka
- **PhD Co-Adviser:** Prof. Bernard Ghanem
- **Research Areas:** Computer Vision, Image Processing, Object Detection, Sparse Coding

- **American University of Beirut**

Beirut, Lebanon

Master of Science in Computer Science; GPA: 3.68

Jan. 2010 – Jul. 2013

- **Dissertation Title:** A Fundamental Framework for Image Matching based on Large Image Features Dataset
- **Defense Date:** May 2013
- **Masters Adviser:** Prof. Maha ElChoubassi
- **Research Areas:** Image Processing, Feature Extraction, Linear Discriminant Analysis

- **Hariri Canadian University**

Mechref, Lebanon

Bachelor of Science in Computer Science (with Distinction); GPA: 3.68

Jun. 2006 – Jun. 2009

ACADEMIC AND PROFESSIONAL SERVICE

- **High Performance Computing for Lebanon** Beirut, Lebanon
Scientific Committee Member August 2024 - Present
- **Lebanese Collegiate Programming Contest** Beirut, Lebanon
Steering Committee Member May 2024 - Present
- **Syndicate of Computer Science in Lebanon** Beirut, Lebanon
Board Member September 2022 - Present

RESEARCH INTERESTS

- **Computer Vision:** research and application in computer vision topics including stereo matching, object detection, feature extraction, sparse coding, structure from motion, 3D understanding
- **Image Processing:** research and application in image segmentation, image rectification, image denoising, image completion, image filtering
- **Optimization:** optimization tools and techniques such as convex optimization, duality, ADMM, proximal operators

PUBLICATIONS

- Nada Said, Bilal Nakhal, Ali Zaart, Lama Affara, “Dual RANSAC with Rescue Midpoint Multi-Trend Vanishing Point Detection”, *Journal of Imaging* 12 (4), 172
- Salma Ghali, Ali Zaart, Lama Affara, “Hybrid Attention and Learnable Thresholding for 3D Brain Tumor Segmentation”, *International Journal of Online and Biomedical Engineering* 22 (3)
- Anis Hijaza, Lama Affara, Ali Zaart, “A Heterogeneous Segmentation of Medical Images for Copy-Move Forgery Detection”, *IEEE International Conference on Emerging Trends in Engineering and Computing* 2025
- Salma Ghali, Lama Affara, Ali Zaart, “MRI Image Segmentation Using an Enhanced Moment-Preserving Technique for Brain Cancer Detection”, *IEEE International Conference on Emerging Trends in Engineering and Computing* 2025
- Joseph Nabhan, Lama Affara “Improved Panoramic Image Stitching using Relative Attributes of Detected Features”, *International Arab Conference on Information Technology* 2025
- Ali Maadarani, Lama Affara, Noura Yassine, “Collaborative Filtering using Weighted Spearman Rank Similarity”, *International Conference on Recent Advances in Mathematics and Informatics* 2025
- Lama Affara, Ali Elzaart, Rabih Damaj “Water Body Satellite Images Segmentation Using Maxwell Boltzmann Distribution”, *BAU Journal-Science & Technology* 5 (2), 9
- Mariam Suboh, Lama Affara “Artistic Style Classification using Convolution Sparse Coding”, *International Conference on Computer & Applications* 2024
- Lama Affara, Bilal Nakhal, “Computer Vision Aided Hotspot Detection in Virtual Environments”, *Architecture and Planning Journal* 28 (3)
- Sara Shaheen, Lama Affara, and Bernard Ghanem, “Constrained Convolutional Sparse Coding for Parametric Based Reconstruction Of Line Drawings”, *International Conference on Computer Vision* 2017
- Lama Affara, Liangliang Nan, Bernard Ghanem, Peter Wonka, “Large Scale Asset Extraction for Urban Images”, *European Conference on Computer Vision* 2016

CERTIFICATIONS AND PROFESSIONAL MEMBERSHIP

- Association for Computing Machinery Professional Member (*2025–Present*)
- Coursera Certificate for Deep Learning Specialization Track by Andrew Ng including the following five courses: Neural Networks and Deep Learning, Hyperparameter Tuning, Regularization and Optimization, Structuring Machine Learning Projects, Convolutional Neural Networks, Sequence Models (*2018*)

SKILLS

- **Software:**
 - **Programming Languages:** Python, MATLAB, C++, Java, SQL, R, L^AT_EX, Javascript, DART, HTML, PHP
 - **Frameworks/Libraries:** PyTorch, TensorFlow, Flutter, OpenCV
 - **Applications:** Advanced Microsoft Excel formulas and VB.NET macros, Microsoft Power Automate for creating flows, Microsoft Power BI for data analysis
- **Languages:** Fluent in English and Arabic (Reading, speaking, and writing).

HONORS

- KAUST Full Scholarship during my PhD studies
- Best Computer Sciences Thesis Award - AUB - June 2013
- Graduate assistance during my Master studies
- Academic scholarships during all years of my university and high school education

REFERENCES

- **Prof. Ghassan Younes**
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- **Prof. Mohammad Abdelrahim**
mna@bau.edu.lb
- **Prof. Peter Wonka**
pwonka@gmail.com