

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 Covolutional 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
- **Hariri Canadian University** Mechref, Lebanon
Bachelor of Science in Computer Science (with Distinction); GPA: 3.68 Jun. 2006 – Jun. 2009

WORK EXPERIENCE

- **Beirut Arab University** January 2021 - Present
Assistant Professor of Computer Science
 - **Teaching:** Data Mining, Image Processing, Discrete Structures, Software Engineering, Database Systems, Object Oriented Programming
 - **Advising:** average of 60 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 and internships
 - **Service:** member of the university quality assurance committee, head of the faculty quality assurance committee, ABET coordinator for the mathematics and computer science department
- **Phoenicia University** September 2019 - January 2021
Instructor of Computer Science
 - **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** Jan. 2010 – Jul. 2013
Graduate Assistant at the Faculty of Arts and Science
 - **Tasks:** Deans Office administrative tasks, Automatization of work processes by building excel macros, preparing pivot tables and adding statistical and visualization elements
- **Cleartag** Beirut, Lebanon
Intern May - Jul. 2008
 - **Web Developer:** front-end and back-end web development, website prototyping

PROFESSIONAL EXPERIENCE

- **Syndicate of Computer Science in Lebanon** Beirut, Lebanon
Board Member September 2022 - Present
 - **Academic Committee:** member of the academic committee at the syndicate
 - **LCPC committee:** member of the steering committee for the Lebanese Collegiate Programming Contest 2024

SKILLS

- **Research:**
 - **Computer Vision:** research and application in computer vision topics including object proposals, object detection, feature extraction, sparse coding, structure from motion, 3D understanding, stereo matching
 - **Optimization:** optimization tools and techniques such as convex optimization, duality, ADMM, proximal operators, MATLAB optimization toolbox, CVX
 - **Image Processing:** research and application in image rectification, image denoising, image completion, image filtering, image segmentation
 - **Deep Learning:** 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
- **Software:**
 - **Programming Languages:** MATLAB, C++, Java, SQL, Python, R, L^AT_EX, Javascript, 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

PUBLICATIONS

- **BAU Journal-Science & Technology, 2024:** Lama Affara, Ali Elzaart, Rabih Damaj “Water Body Satellite Images Segmentation Using Maxwell Boltzmann Distribution”, BAU Journal-Science & Technology
- **ASCAAD 2022:** Lama Affara, Bilal Nakhal, “Computer Vision Aided Hotspot Detection in Virtual Environments”, International Conference of the Arab Society for Computation in Architecture, Art and Design
- **ICCV 2017:** Sara Shaheen, Lama Affara, and Bernard Ghanem, “Constrained Convolutional Sparse Coding for Parametric Based Reconstruction Of Line Drawings”, International Conference on Computer Vision
- **ECCV 2016:** Lama Affara, Liangliang Nan, Bernard Ghanem, Peter Wonka, “Large Scale Asset Extraction for Urban Images”, European Conference on Computer Vision
- **Arxiv Preprint:** Lama Affara, Bernard Ghanem, Peter Wonka, “Fast Convolutional Sparse Coding in the Dual Domain, arXiv preprint arXiv:1709.09479, To be submitted to WACV2025
- **Arxiv Preprint:** Lama Affara, Bernard Ghanem, Peter Wonka, “Supervised Convolutional Sparse Coding”, To be submitted to WACV2025

REFERENCES

- **Prof. Mohammad Abdelrahim**
mna@bau.edu.lb
- **Prof. Peter Wonka**
pwonka@gmail.com
- **Prof. Bernard Ghanem**
bernard.ghanem@kaust.edu.sa