

# CURRICULUM VITAE

**Amal HAMMAMI**

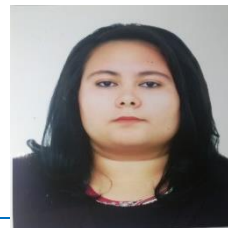
**Assistant Professor Ph. D, Engineer in Computer Systems**

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Born on 17/08/1991 Menzel Bourguiba, Tunisia.



## EDUCATIONAL BACKGROUND

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- 2016-2021** Ph. D in Computer Systems Engineering (ISI)  
National School of Engineers of Sfax  
University of Sfax, Tunisia.
- 2012-2015** National Diploma in Computer Science Engineering  
National School of Engineers of Sfax  
University of Sfax, Tunisia
- 2010-2012** Preparatory Cycle in Physics & Chemistry Preparatory  
Institute for Engineering Studies of Sfax (IPEIS)  
University of Sfax, Tunisia
- 2010** Baccalaureate Diploma in Experimental Sciences  
Secondary School Habib Maazoun, Sfax, Tunisia

## SKILLS AND ABILITIES

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<b>Programming languages</b>	Python, C++, C, C#, JAVA
<b>Web technologies</b>	PHP, HTML5, JavaScript, CSS, XML, JEE, JSP, Struts
<b>Mobile technologies</b>	Android, mobile web (HTML5, CSS3)
<b>Programming Tools</b>	PyCharm, Matlab, Eclipse, Netbeans, Visual Studio, Geany, Codeblocs, Android Studio
<b>Frameworks</b>	Asp.net, CakePHP, OpenCV
<b>Design Tools</b>	StarUML, PowerAMC, Papyrus
<b>SGBD</b>	Mysql, SqlServer, Oracle
<b>Operating systems</b>	Windows, Ubuntu

## RESEARCH ACTIVITIES

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**2016-2021** **Doctoral Thesis in Computer Systems Engineering**

- **Research Team:**  
REsearch Group on Intelligent Machines (REGIM-Lab) National School of Engineers of Sfax, University of Sfax, Tunisia

- **Subject:**  
Hybrid video watermarking approaches for content authentication and tampering localization
- **Supervisors:**  
Chokri BEN AMAR, Professor, University of Sfax  
Amal BEN HAMIDA, Assistant professor, University of Sfax
- **Abstract:**  
The work presented in this thesis intends to develop new trustworthy watermarking approaches for video security protection and authenticity verification especially in a video surveillance context. Actually, different multi-frequential watermarking schemes are proposed. The innovation in these systems lies at the watermark generation and embedding levels. Indeed, various detectors are applied for reliable features extraction from the most important regions in the host frame to design a meaningful authentication data that satisfies the attacks characterization need. Besides, the beneficial characteristics of several transforms are adopted to establish a new additive insertion algorithm with adaptively calculated strength factors. To appropriately address the tampering localization challenge, we further propose a semi-fragile dual watermarking system performing in the hybrid domain. In this method, two distinct watermark are tailored for each frame to guarantee a rigorous authenticity verification with an accurate tamper localization at both temporal and spatial levels. Moreover, the embedding positions are identified in accordance with the human visual system through a texture-based analysis. The proposed approaches are assessed with respect to imperceptibility, embedding capacity and robustness or semi-fragility performance and the outcomes testify their ability to provide a favorable trade-off between the above-mentioned requirements.
- **Keywords:**  
content-based video watermarking, authentication, tampering localization, video surveillance, attacks characterization

**2018                      Research internship at the Bordeaux Computer Science Research Laboratory (LaBRI), University of Bordeaux, France**

- **Subject:** Video surveillance scenes content authentication using video watermarking.
- **Supervisor:** Henri NICOLAS, Professor, University of Bordeaux

**2019                      Research internship at the Bordeaux Computer Science Research Laboratory (LaBRI), University of Bordeaux, France**

- **Subject:** Development of regions based semi-fragile watermarking scheme for video authentication.
- **Supervisor:** Henri NICOLAS, Professor, University of Bordeaux

**PEDAGOGICAL ACTIVITIES**

• ***Pedagogical experiences***

<b>Academic Year</b>	<b>Position</b>	<b>Establishment</b>
Since April 2025	Assistant Professor	Faculty of Law, Economics and Management Sciences of Jendouba (FSJEGJ)
2024 - 2025	Contractual Assistant	Faculty of Sciences of Sfax (FSS)
2023 - 2024		

2022 - 2023		
2021 - 2022	Part-time Teacher	National Engineering School of Sfax (ENIS) Faculty of Sciences of Sfax (FSS)

• **Taught Subjects**

<b>Subject</b>	<b>Audience</b>	<b>Intervention</b>
<b>Logical Architecture</b>	2nd year Bachelor's degree in Business Intelligence (2LBI)	Course
		TD
<b>Mobile Development</b>	3rd year Bachelor's degree in Business Intelligence (3LBI)	Course
	3rd year Bachelor's degree in Business Information System (3LBIS)	Course
	2nd year Bachelor's degree in Computer Systems Engineering (LISI2. IOT)	Course
<b>ISO 27701 Standard</b>	2nd year Professional Master's in Cybernetics and Marketing (2MPCM)	Course
<b>IHM &amp; Lean User Experience</b>	1st year Professional Master's in Cybernetics and Marketing (1MPCM)	Course
<b>Algorithms and Data Structures</b>	1st year Bachelor's degree in Management Information Systems (1LIG)	TD
		TP
<b>Information Systems Governance</b>	2nd year Bachelor's degree in Business Intelligence (2LBI)	TD
<b>Digital Skills</b>	1st year Bachelor's degree in Economics (1LECO)	TD
<b>Multimedia Networks</b>	3rd year Bachelor's degree in Computer Systems Engineering (LISI3.IRS)	Course
<b>Multimedia Technologies</b>	2nd year Bachelor's degree in Computer Systems Engineering (LISI2)	Course
	1st year of Bachelor's degree in Computer Science (LSI1)	TD
		TP
<b>Cyber-Security</b>	3rd year Bachelor of Science in Computer Science (LSI3)	TP
	2nd year Bachelor's degree in Computer Systems Engineering (LISI2. IOT)	Course
		TP
	2nd year Bachelor's degree in Computer Systems Engineering (LISI2. IRS)	TP
<b>Introduction to Signal Processing</b>	1st year Bachelor's degree in Computer Systems Engineering (LISI1)	TP
<b>Multimedia Indexing and Search Techniques</b>	2nd year Bachelor of Science in Computer Science (LSI2)	TP
<b>Computer Vision 1</b>	1st year Computer Engineering (GI1)	Integrated Course
		TP

## INTERNSHIPS AND PROFESSIONAL EXPERIENCES

<b>2022</b>	Reviewer for the Signal Processing: Image Communication Journal
<b>2021-2022</b>	Reviewer for the Visual Computer Journal
<b>March 2021</b>	Participation in Third Edition of the Study day in Medical Images Processing and Analysis, (JETAIM'3)

- February 2021** Participation in Third PHD Students Day on Advanced Technologies for Electronic Systems, Sustainable Energies, Telecommunications, and Image and Signal Processing
- December 2020** Participation in First Tunisian Forum on Artificial Intelligence, (AI@tn'2020)
- December 2020** Participation in the 32nd Edition of the Workshop of Intelligent Machines: Theory and Applications, (WIMTA32)
- May 2020** Participation in International Conference in Central Europe on Computer Graphics, Visualization and Computer Vision (WSCG), Plzen, Czech Republic
- November 2019** Participation in the workshop of management of CBHE ERASMUS projects according to the ISO 21500 standard, Sfax, Tunisia
- November 2019** Participation in the workshop on IOT & Smart City, Sfax, Tunisia
- May-June 2019** Research internship at the Bordeaux Computer Science Research Laboratory (LaBRI), University of Bordeaux, France  
**Subject:** Development of regions based semi-fragile watermarking scheme for video authentication.
- March 2019** Participation in the 31st Edition of the Workshop of Intelligent Machines: Theory and Applications, (WIMTA31), Monastir, Tunisia
- March 2019** Participation in the second edition of the forum on the reform of the education system: entrepreneurial approach, Sfax, Tunisia
- February 2019** Participation in International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Application (VISIGRAPP) Prague, Czech Republic
- December 2018** Participation in the 30th Edition of the Workshop of Intelligent Machines: Theory and Applications, (WIMTA30), Sousse, Tunisia
- November 2018** Participation in the IEEE Cyber Security Workshop, Sfax, Tunisia
- April-June 2018** Research internship at the Bordeaux Computer Science Research Laboratory (LaBRI), University of Bordeaux, France  
**Subject:** Video surveillance scenes content authentication using video watermarking.
- December 2017** Best Poster Award in the 29th Edition of the Workshop of Intelligent Machines: Theory and Applications, (WIMTA29), Sousse, Tunisia
- March 2017** Participation in the Workshop Big Data Analytics, Sfax, Tunisia
- December 2016** Participation in the 27th Edition of the Workshop of Intelligent Machines: Theory and Applications, (WIMTA27), Sousse, Tunisia
- February-June 2015** PFE internship at SBS Consulting company, Sfax  
**Subject:** Development of a web-oriented module of the environmental management system according to the ISO 14001:2004 standard

for the Qualitop software commercialized by SBS Consulting

- June 2014** Second year internship at MTD GROUP company, Sfax  
**Subject:** Development of a web application for survey management using CakePHP framework.
- February-May 2014** PFA internship at National School of Engineers of Sfax, Sfax  
**Subject:** Development of a mobile application allowing the phone user to find the nearest bus station to reach his targeted destination.
- July 2013** First year internship at computer center of the Tunisian Electricity and Gas Company (STEG), Sfax

## AFFILIATIONS

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Member in REsearch Group on Intelligent Machines (REGIM-Lab)

## PUBLICATIONS

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**Hammami Amal**, Ben Hamida Amal, Ben Amar Chokri, Nicolas Henri (2024) "Blind Semi Fragile Hybrid Domain Based Dual Watermarking System for Video Authentication and Tampering Localization". Circuits, Systems and Signal Processing 43(1):264–301. DOI: [10.1007/s00034-023-02462-8](https://doi.org/10.1007/s00034-023-02462-8) (CSSP 2024)

**Hammami Amal**, Ben Hamida Amal, Ben Amar Chokri (2023) "Robust Video Watermarking System Using Lifting Wavelet Transform and Singular Value Decomposition". Traitement et Analyse de l'Information: Méthodes et Applications. (TAIMA 2023)

**Hammami Amal**, Ben Hamida Amal, Ben Amar Chokri (2021) "Blind Semi-Fragile Watermarking Scheme for Video Authentication in Video Surveillance Context". Multimedia Tools and Applications 80(5):7479-7513. DOI: [10.1007/s11042-020-09982-4](https://doi.org/10.1007/s11042-020-09982-4) (MTAP 2021)

**Hammami Amal**, Ben Hamida Amal, Ben Amar Chokri, Nicolas Henri (2020) "Regions Based Semi- Fragile Watermarking Scheme for Video Authentication". International Conference in Central Europe on Computer Graphics, Visualization and Computer Vision, pp. 96-104. DOI: [10.24132/JWSCG.2020.28.12](https://doi.org/10.24132/JWSCG.2020.28.12) (WSCG 2020)

**Hammami Amal**, Ben Hamida Amal, Ben Amar Chokri (2019) "A Robust Blind Video Watermarking Scheme Based on Discrete Wavelet Transform and Singular Value Decomposition". International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Application, pp. 597-604. DOI: [10.5220/0007685305970604](https://doi.org/10.5220/0007685305970604) (VISIGRAPP 2019)

## LANGUAGES SKILLS

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<b>Arabic</b>	Mother tongue
<b>French</b>	Well (reading, written, spoken)
<b>English</b>	Well (reading, written, spoken)