

Dr. Yacine Hadjadj

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Ph.D. in Embedded Systems | IEEE Q1 Author | AI & Embedded Systems Researcher | 5+ Years Across Academia and Industry

Professional Experience

Industrial Solutions Consultant

Nov 2019 – Jan 2025

Automation & IT Engineer

Multiple industrial sites, Algeria

- Delivered end-to-end IT, industrial automation, and digitalization solutions for global manufacturing leaders including Henkel and Unilever, as well as public sector authorities.
- Digitalized Henkel production lines by developing a custom SCADA-like platform for Siemens PLC real-time monitoring, visualization, and reporting using Node-RED, Snap7, and Grafana.
- Recovered and stabilized QNX-based industrial systems at Unilever, and supported the deployment of IT and digitalization infrastructures.
- Developed automation, digital record management, and reporting systems for public sector authorities.

Academic Experience

Higher School of Electrical and Energy Engineering

Jan 2025 – May 2025

Lecturer

Oran, Algeria

- Taught Tutorial & Lab sessions of Analog Electronics.

Djillali Liabes University - Electrical Engineering Faculty

Nov 2019 – Feb 2025

Lecturer & Ph.D. Researcher

Sidi Bel Abbes, Algeria

Teaching

- Computer Vision, Real-Time/Embedded Systems, Computer Architecture, Programmable Logic Controllers, and Digital Signal Processors.

Master's Thesis Supervision

- Deep Learning, Object Detection, Edge AI Computing, Internet of Things, Embedded Systems.

Research

- Developed [VCMalloc](#), a custom memory allocator improving performance through virtual contiguity.
- Published two IEEE Q1 articles in [Transactions on Computers](#) and [Embedded Systems Letters](#).
- Coauthored international [Q1 article on AI & Super-resolution](#) and an [IEEE conference on MEMS](#).
- Presented two papers on compilers and memory allocation in JDGE'2023 (national conference).

Research Projects, Innovation & External Recognition

- University-incubated innovative project awarded the “*Innovative Project Label*” by the Ministry of Higher Education and Scientific Research (Algeria), 2024–2025. ([Institutional announcement](#))

Publications

International Indexed Journal Articles

- Hadjadj, Y., et al. “VCMalloc: A Virtually Contiguous Memory Allocator.” *IEEE Transactions on Computers*, 72(12), 2023. [DOI](#)
- Hadjadj, Y., et al. “Virtually Contiguous Memory Allocation in Embedded Systems: A Performance Analysis.” *IEEE Embedded Systems Letters*, 17(1), 2024. [DOI](#)
- Mazari, S., et al. “Evaluating the Effect of Super-Resolution for Automatic Plant Disease Detection: Application to Potato Late Blight Detection.” *Multimedia Tools and Applications*, 83(32), 2024. [DOI](#)

International Indexed Conferences

- Lahreche, T., Kandouci, M., Hadjadj, Y. “A Comparative Analysis of Different Diaphragm Shaped for MEMS Capacitive Pressure Sensor.” *SSD 2022*. [DOI](#)

Algerian National Conferences

- Hadjadj, Y., et al. “Benchmarking Memory Allocation Performance in Windows: A Comparative Analysis of malloc Across Different Compilers.” *JDGE 2023*, Sidi Bel Abbès, Algeria. [Link](#)

- Hadjadj, Y., et al. “Efficiency and Memory Utilization Benchmarking of C++ Multidimensional Array Libraries: A Comparative Study.” *JDGE 2023, Sidi Bel Abbès, Algeria*. [Link](#)

Skills

Development (C/C++, Python, Java, Web, GUI, Make, CMake, Git)
Artificial Intelligence (PyTorch, TensorFlow, YOLO, Edge Inference, Model Architecture)
SBC & MCU (Raspberry Pi, Nvidia Jetson, PIC, Arduino, ESP32/8266, SIMCom)
Hardware Acceleration (CUDA, OpenCL, OpenMP)
Databases (MySQL/MariaDB, SQLite, InfluxDB, Redis)
FPGA, DSP
PLC (S7-1200/1500, TIA Portal, WinCC)
Networking (Subnetting, VPN, PBR, Pfsense, OpenWRT, linux iptables)
Virtualization (Hyper-V, ESXi, Docker, Compose)
Automation & Visualization (Node-RED, Grafana)

Soft Skills: Learning Agility, Analytical Thinking, Communication, Leadership, Mentorship

Education

Djillali Liabes University			<i>Sidi Bel Abbes, Algeria</i>
<i>Ph.D. – Embedded Systems</i>	With highest distinction		Feb 2025
<i>M.Sc. – Embedded Systems</i>	GPA: 85.05%	Rank: 1/16 (Valedictorian)	Jul 2019
<i>B.Sc. – Electronics</i>	GPA: 71.2%	Rank: 4/77 (Top 5%)	Jul 2017

References

Name	Affiliation	Email	Profile
Pr. Nasreddine Taleb	UDL SBA	ne_taleb@univ-sba.dz	Google Scholar
Pr. Ali Benouar	ESGEE Oran	benouar_ali@esgee-oran.dz	Google Scholar