

Ahmed Jouini

AI Research Engineer — Computer Vision

PhD candidate in Artificial Intelligence — thesis defense scheduled 24 November 2026

Paris, France · +33 7 66 52 00 74 · jouiniahmed66@gmail.com

ahmedjouini.com · linkedin.com/in/ahmed-jouini10 · [HAL](#)



SUMMARY

AI research engineer in computer vision, in love with visual intelligence: I design and train models that turn raw video into structured understanding of events, geometry and human motion. Quick to embrace new ideas, now moving toward world models: physical intelligence that learns like humans, from vision and interaction.

PEER-REVIEWED PUBLICATIONS

StrokeNet: Structured State Space Duality for Pose-based Stroke Recognition in Racket Sports

A. Jouini, F. Chaieb-Chakchouk, A. Loth. *WACV 2027, Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision (IEEE)*.

Accepted

CourtStyle: Unified Self-Supervised Framework for Tennis Playing Style Discovery

A. Jouini, F. Chaieb-Chakchouk, A. Loth. *KES 2026, Procedia Computer Science (Elsevier)*.

In press

TAL4Tennis: Temporal Action Localization in Tennis Videos Using State Space Models

A. Jouini, M. A. Lajnef, F. Chaieb-Chakchouk, A. Loth. *ICAART 2025, SciTePress*. [DOI](#)

Published

A Deep Learning-Based Framework for Racket Sports Court Registration

A. Jouini, M. Elloumi, F. Chaieb. *AIAI 2024, IFIP AICT vol. 713, Springer*. [DOI](#)

Published

EXPERIENCE

Doctoral Researcher, Computer Vision

French Tennis Federation (FFT)

Jan 2023 – Present

Paris area, France

- **Video analysis framework:** built an end-to-end tracking framework for single-camera broadcast video: court detection, player detection and tracking, and ball trajectory reconstruction.
- **Temporal action localization (TAL4Tennis):** bidirectional selective state space model (Mamba) capturing local transitions and long-range dependencies in linear time; outperforms state-of-the-art methods. [Code](#)
- **Court registration (CourtAlign):** segmentation-based and end-to-end geometric approaches aligning broadcast frames with a metric court model; more accurate, reliably rejecting non-registrable views. [Code](#)
- **Multimodal benchmark (Fine-Tennis10):** fine-grained stroke dataset with expert-defined classes and synchronized RGB video, 2D/3D player poses, 3D meshes and ball trajectories.
- **Fine-grained stroke recognition (StrokeNet):** Mamba-2 skeleton models jointly encoding body motion and ball trajectory; separate strokes with similar movements, robust under degraded observations. [Code](#)
- **Playing-style discovery (CourtStyle):** self-supervised learning of playing styles from match statistics without style labels, extending analysis from single actions to playing behavior. [Code](#)
- **Requirements analysis:** conducted on site at Roland-Garros with FFT tennis experts and data scientists.

Computer Vision Research Intern — Badminton Video Analysis

Efrei Research Lab, with the French Badminton Federation

Apr – Sep 2022

Villejuif, France

- Designed an end-to-end video understanding pipeline for monocular badminton broadcasts: court detection, CNN-based player detection and tracking, shuttlecock tracking and stroke recognition.
- Tackled small, fast shuttlecocks, doubles interactions, occlusions, viewpoint changes and rally segmentation.
- Converted predictions into rally-level statistics linking player positions, shuttle paths and strokes to tactics.

Machine Learning Engineer Intern — NLP

The Story Market

Dec 2021 – Feb 2022

Munich, Germany (remote)

- Built a data acquisition pipeline for German-language news (targeted web scraping of major press sources, text preparation) and benchmarked TF-IDF, Doc2Vec and pretrained BERT-based document representations.
- Developed and evaluated named entity recognition and topic modeling modules that turn unstructured articles into structured entities, themes and client-facing analytics.

Machine Learning Engineer Intern — Image Classification

Jul – Aug 2021

Alight MEA

Tunis, Tunisia

- Developed an image classification pipeline (preprocessing, cleaning, dataset preparation, CNN evaluation) and fine-tuned a pretrained VGG16 by transfer learning, reusing its backbone for hierarchical features.
- Explored an attention-enhanced VGG16 inspired by goal-directed attention, with extensive ablations of scaled dot-product attention for vision.

Machine Learning Engineer Intern — Conversational AI

Jul – Sep 2020

Alight Consulting GmbH

Ottobrunn, Germany (remote)

- Developed an Azure-based assistant for natural-language search over an e-learning library; built and trained its NLP layer with Microsoft Azure LUIS (domain intents, entities, user utterances). [Demo](#)
- Integrated back-end services and the Microsoft Graph API to turn interpreted queries into structured actions and context-aware responses.

RESEARCH ACTIVITIES

Oral presentations: KES 2026, online (Sep 2026); ICAART 2025, Porto (Feb 2025); AIAI 2024, Corfu (Jun 2024)
Best Poster Award, Doctoriales (doctoral school ED 455), Paris Jan 2024
Attendee, ICCV 2023, Paris: workshops and networking Oct 2023
Poster and “My Thesis in 180 Seconds”, [Sciences 2024](#) summer school, Dinard Jun 2023
Supervised 3 M1/M2 research interns: model design, training, benchmarking and mentoring

TECHNICAL SKILLS

Computer Vision	Video Understanding, Temporal Action Localization, Action Recognition, Object Detection & Tracking, 2D/3D Pose Estimation, Semantic Segmentation, Homography Estimation, Image Classification, Generative World Models
Deep Learning	PyTorch, TensorFlow, State Space Models, Transformer Architectures, Vision Foundation Models, Multimodal Learning, Self-Supervised & Contrastive Learning, Representation Learning, Transfer Learning & Fine-Tuning, Generative Models
LLMs, Agents & NLP	Agentic Engineering: Multi-Agent Orchestration (Agent Swarms), Prompt Engineering, Structured LLM Generation, LLM-as-a-Judge Evaluation, NER, Topic Modeling
Research & Experimentation	Benchmark & Dataset Design, Data Annotation & Curation, Experimental Design & Ablation Studies, Statistical Testing, Reproducible Experiments, GPU Training (CUDA)
Programming	Python, Linux, Git, Conda, pytest
Leadership	Team Management, Mentoring, Conflict Resolution, Requirements Analysis
Languages	Arabic (native), French (fluent), English (professional), German (conversational)

EDUCATION

PhD in Computer Science — in progress

2023 – Present

Thesis defense scheduled 24 November 2026

Université Paris-Panthéon-Assas · Efrei Research Lab

Paris, France

Thesis: *Learning Structured Representations for Tennis Video Understanding from a Single Broadcast Camera*

National Engineering Degree in Computer Science

2019 – 2022

INSAT, National Institute of Applied Sciences and Technology, University of Carthage

Tunis, Tunisia

Integrated Preparatory Cycle (MPI): Mathematics, Physics, Computer Science · INSAT, Tunis

2017 – 2019

Baccalaureate in Mathematics · Gaafour 2 High School, Siliana, Tunisia

2016 – 2017

CERTIFICATIONS

[Building RAG Agents with LLMs](#) (NVIDIA DLI) · Fundamentals of Deep Learning (NVIDIA DLI) · Accelerating End-to-End Data Science Workflows (NVIDIA DLI) · 5-Day Gen AI Intensive Course with Google (Kaggle) · Structuring Machine Learning Projects (Coursera) · [MTA: Python Programming](#) (Microsoft)