Youssef Assis

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Education

University of Lorraine — *Nancy, France*
PhD degree, Computer science — *Nov 2020 - March 2024*
Thesis title: Intracranial aneurysm detection using deep learning **[Manuscript, Examiners' report]**

National Institute of Statistics and Applied Economics (INSEA) — *Rabat, Morocco*
Master's degree, Information and intelligent systems (Ranking: 2/19) — *Sept 2018 - Aug 2020*
Thesis title: Question answering (QA) from water service reports

Faculty of Science and Technology (FST) — *Beni Mellal, Morocco*
Bachelor's degree, Computer science (Ranking: 2/35) — *Sept 2015 - Aug 2018*
Graduation project: Website and mobile application deployment

Professional Experience

DentalMonitoring — *July 2024 - now*
R&D Engineer, Advanced AI-powered solutions for orthodontics — *Nancy, France*

- Developed and deployed machine learning models.
- Evaluated model performance on real-world data and optimized production efficiency.
- Worked in a scale-up environment, showing adaptability and initiative.

Inria Laboratory — *Nov 2020 - March 2024*
PhD candidate, Medical image analysis with deep learning — *Nancy, France*

- Close collaboration with the CHRU's neuro-radiology department of Nancy, France.
- Proposed a fast and approximate data labeling approach.
- Designed cutting-edge algorithms for 3D image segmentation and object/key-point detection.
- Conducted 3D pose estimation for small and diverse-shaped biomedical objects.
- Published research in top-tier journals and conferences (e.g., IJCARS, MICCAI).

IUT Nancy-Charlemagne — *Feb 2021 - June 2023*
Teaching assistant, Web programming and database management — *Nancy, France*

- Conducted practical sessions on web programming, covering HTML, JavaScript, PHP, and SQL.

ICube Laboratory — *Mar 2020 - Aug 2020*
Internship, Natural language processing (NLP) — *Strasbourg, France*

- Designed a CamemBERT Transformers-based Question Answering (QA) system.
- Prepared dataset and fine-tune the model for real-world water and sanitation reports.
- Adapted the system to process and extract answers from PDF files.

Selected Projects

- Single-stage deep learning model for aneurysm pose estimation **[code]**.
- Anchor-free deep learning model for aneurysm detection using spheres **[code]**.
- Efficient data sampling and generation techniques for aneurysm detection and segmentation **[code]**.
- Visualization *plug-in* to manipulate reformatted cut planes in a 3D view **[code]**.
- 3D Slicer *plug-in* for fast data annotation using spheres or boxes **[code]**.

Skills

Soft Skills	Problem-solving, teamwork, autonomy, time management.
Programming Languages	Python, C, Matlab, Java, JavaScript, PHP, Bash, Latex.
Machine Learning Libraries	PyTorch, Keras, Scikit-learn, OpenCV.
Neural networks architectures	CNN, GAN, Attention Mechanism, Transformer.
Medical Image Analysis	DICOM, NIfTI, MONAI, TorchIO, ITK, 3D Slicer, Nibabel.
Other	Git, Qt, Docker, Linux, JupyterLab, GPU, VSCode, API REST.

Awards

2023 *STAR* Award at the MICCAI conference (Vancouver, Canada).

Languages

English: Fluent. **French**: Fluent. **Arabic**: Native.