

IMEDRA SPHERE

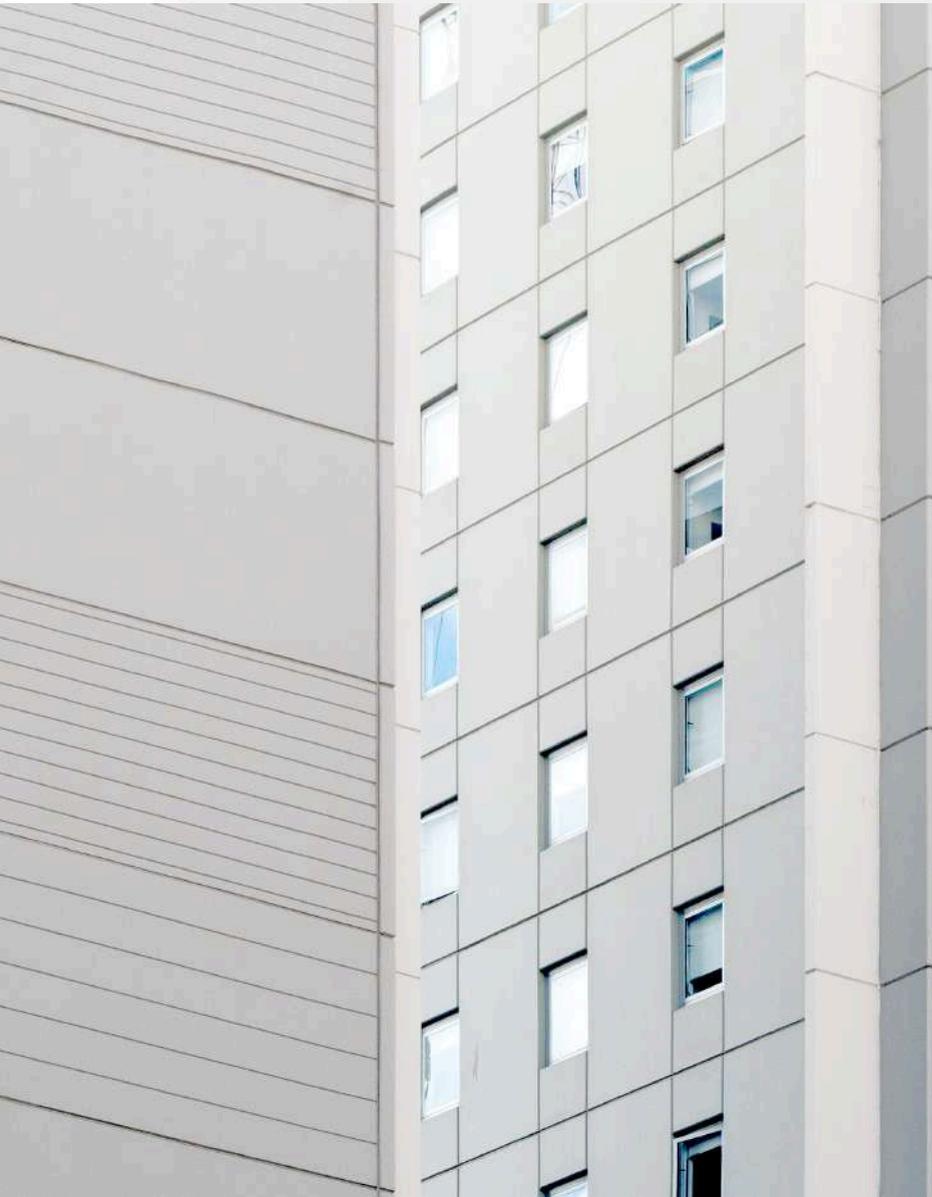
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PFE BOOK

2025-2026



IMEDRA
SPHERE



ABOUT IMEDRA SPHERE



IMEDRA
SPHERE

Founded in : August 2024

HQ Location : Menzeh 6



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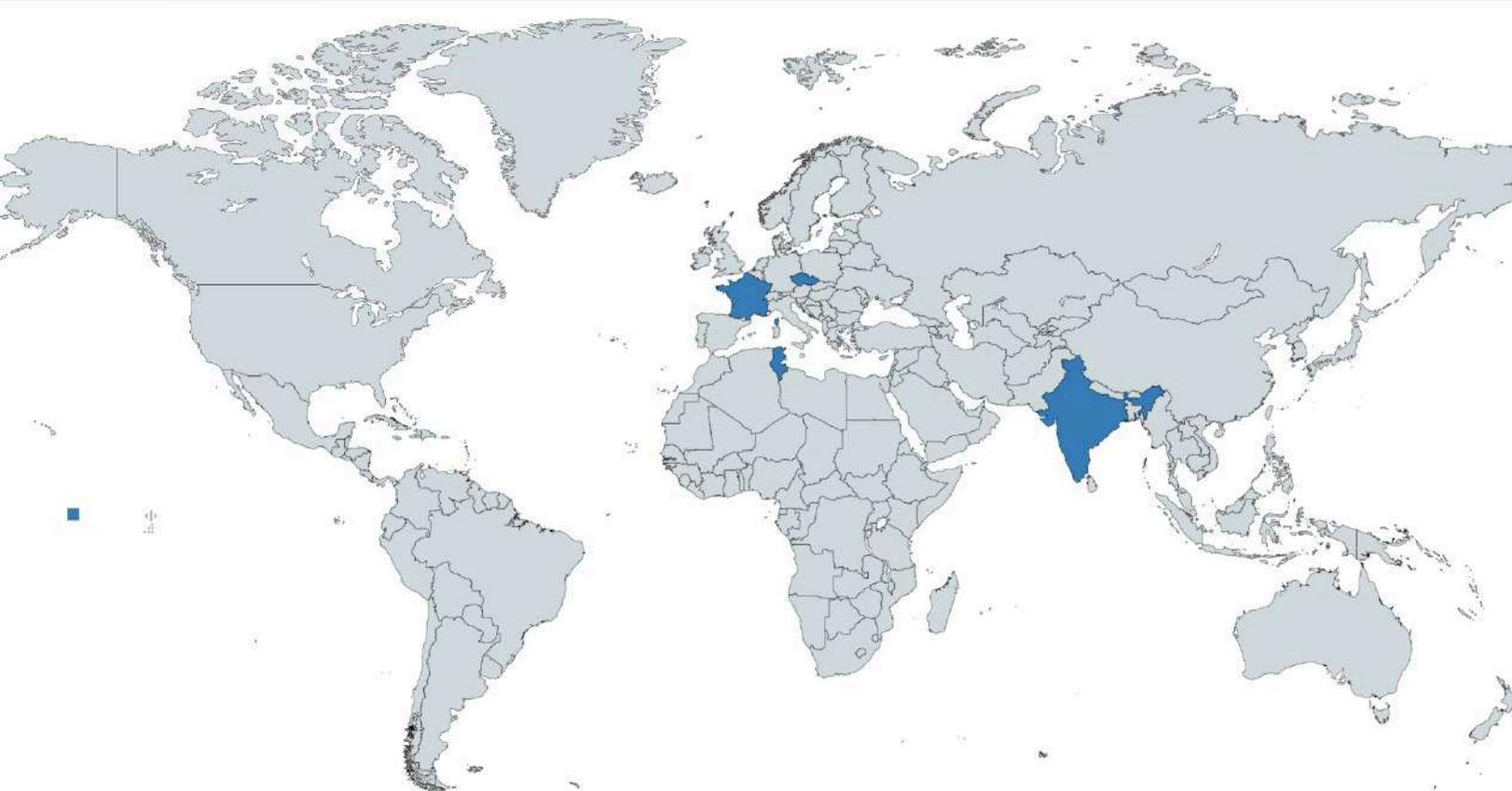
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IMEDRA SPHERE FROM CREATION

in 2024 To June 2025



+8

Detected & Responded
Cyber Attacks

+1

Zero-Day Discovered

+2

Phishing As Service Revealed

+17

Internships : Security web dev
Data science

+18

Training and Conference

+5

Application Developed

**PENETRATION
TESTING**

**SECURITY
CONSULTING**

TRAINING

**APPLICATION
DEVELOPMENT**

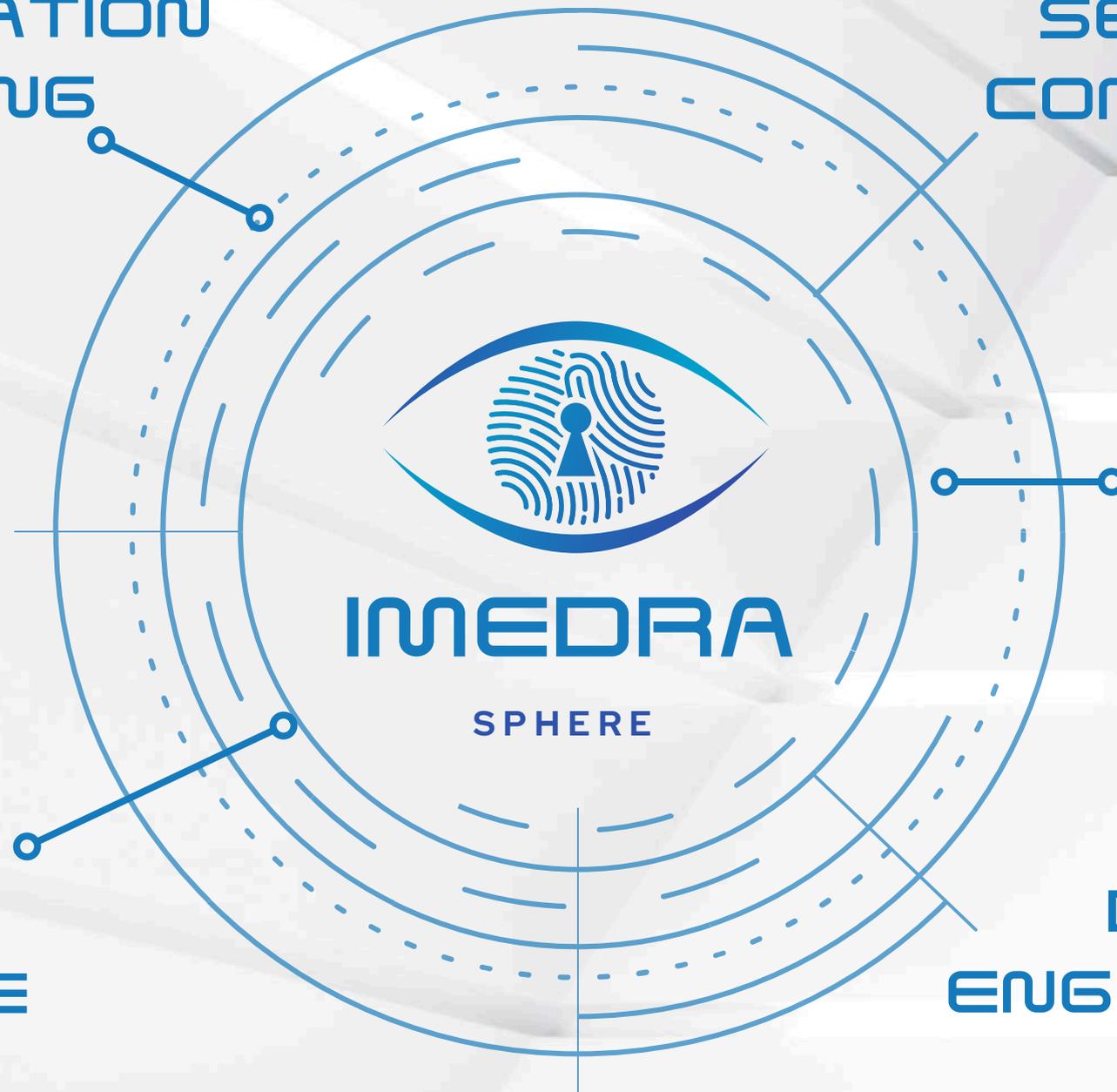
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**INCIDENT
RESPONSE**

**DATA
ENGINEERING**

**SYSTEM
ADMINISTRATION**





Project Framework & Benefits

Real-World Impact: A concrete and valuable subject aligned with a professional HealthTech product roadmap.



Industrial Mentorship

Guidance from industry experts focusing on both technical engineering and product management, with full academic coordination.



Agile Culture

Execution through Agile methodology, including regular sprints, peer reviews, and live demos.



Career Opportunities

High potential for post-internship collaboration via Freelance, Permanent Contract (CDI), or Co-innovation partnerships.

Description

This project involves designing a modular Extended Detection and Response (EDR) platform that provides real-time monitoring and automated defense against stealthy cyber threats. The solution integrates with a malware analysis pipeline for automated response while incorporating a full product positioning strategy to ensure market readiness.

Objectives

- ✓ Build lightweight Windows/Linux agents for telemetry collection and threat detection using YARA/Sigma rules.
- ✓ Implement a central server for automated incident response and malware analysis integration.
- ✓ Develop a Go-to-Market plan, including branding, competitive analysis, and professional marketing assets.

Technologies

Languages: Python, C, Go.
Monitoring: ETW, eBPF.
Detection: YARA, Sigma.
Databases: PostgreSQL, Elasticsearch.
Design: Figma, Canva.

Profil

Bac+3/Bac+5 – Cybersecurity

Duration

4–6 months
Remote



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2 Mailing system

Description

Development of a full-stack mailing platform (Front-end & Back-end) enhanced with Artificial Intelligence to optimize email management. The system provides a seamless communication experience by integrating intelligent features like automated categorization, summarization, and smart replies

Objectives

- ✓ Build a scalable architecture for secure email transmission and data storage.
- ✓ Implement NLP features for smart composing, spam classification, and content summarization.
- ✓ Design a responsive and intuitive dashboard for efficient inbox management.

Technologies

Stack: React/Next.js (Front-end), Node.js/FastAPI (Back-end).
AI: OpenAI API, LangChain, or Hugging Face.
Database: MongoDB or PostgreSQL.
Mailing: SMTP, IMAP/POP3, SendGrid.

Profil

Bac+3/Bac+5 – Cloud Architecture - Software Engineering

Duration

4–6 months
Remote



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3 Cloud-based Storage System

Description

Design and implementation of a scalable, secure cloud storage platform for centralized data management. The system provides users with the ability to upload, organize, and share files via a web interface, featuring high availability, data encryption, and cross-device synchronization.

Technologies

Stack: React , Go or Node.js

Storage: AWS S3, MinIO, or Google Cloud Storage.

Database: PostgreSQL and Redis

Security: OAuth2, JWT, and AES-256 encryption.

Profil

Bac+4/Bac+5 – Full-stack

Development & Artificial Intelligence

Objectives

- ✓ Build a robust backend capable of handling large-scale file storage and concurrent user access.
- ✓ Implement end-to-end encryption and role-based access control (RBAC) to ensure data integrity.
- ✓ Create a responsive dashboard for seamless file management, versioning, and sharing.

Duration

4–6 months

Remote



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4 Network Firewall

Description

Development of a custom hardware-software network firewall designed specifically for small and medium-sized businesses. This project combines a low-power electronic hardware appliance with a robust software suite to monitor incoming/outgoing traffic, enforce security policies, and prevent unauthorized access. It focuses on providing enterprise-grade security on cost-effective

Objectives

- ✓ Develop a high-performance filtering engine to analyze traffic based on IP, port, and protocol.
- ✓ Design an electronic architecture capable of handling multiple Gigabit Ethernet interfaces with minimal latency.
- ✓ Create a web-based dashboard for non-technical SMB owners to manage security rules and view threat reports.

Technologies

Software Stack: C/C++ , Python/Go , React .

Networking: Netfilter/IPTables, DPDK

Electronic Hardware: ARM-based SoC or an FPGA for hardware acceleration.

OS: Hardened Linux

Profil

Bac+3 /Bac+5 – Cybersecurity /
Embedded Electronics / Hardware
Engineering

Duration

4–6 months

Remote



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5 Development of a search engine

Description

Development of a high-performance, full-text search engine designed to crawl, index, and retrieve information efficiently. The system utilizes a web crawler to gather data, an indexing engine to organize terms using inverted indexes, and a ranking algorithm to provide the most relevant results to the user.

Technologies

Languages: Python ,Java or C++ for the core engine.

Search Core: Elasticsearch, Apache Solr, or a custom Lucene-based implementation.

Storage: NoSQL

Front-end: React / Vue.js

Profil

Bac+3/Bac+5 – Software Engineering / Data Science / Backend Systems.

Objectives

- ✔ Build a robust web crawler to traverse links and extract content from diverse web pages or local documents.
- ✔ Implement an inverted index structure to enable near-instantaneous search queries across large datasets.
- ✔ Develop a ranking algorithm to ensure result relevance based on keyword frequency and link authority.

Duration

4–6 months

Remote



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Required Level

Bac+4 / Bac+5
Engineering cycle or
master's degree.

Application Package

 Updated CV

 Cover Letter (max 1 page)

specifying:

- Project Reference Code.
- Relevant skills and expertise.

Submission Details

Primary Email:
administration@imedrasphere.com

Alternative Email:
support@imedrasphere.com

Subject Line: Application PFE –
PFE-0X – [Full Name]

Selection Process

- 1** Screening: Review of application package and pre-selection.
- 2** Interview: Short technical and product-focused discussion.
- 3** Validation: Tripartite agreement between Student, University, and IMEDRA SPHERE.



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Thank You

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