Ismail Moudden

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Professional Summary

Computer Science Engineering student at **EPFL**, passionate about **AI** and its real-world applications. Experienced in developing **AI-driven solutions** and **agentic systems**, as well as professional-grade platforms across finance, machine learning, education, and consulting. Strong foundation in **software engineering**, with experience in **C**, **Java**, **Python**, and **Scala**, plus algorithms, data structures, and full-stack development. Demonstrated leadership through multidisciplinary projects and **300K+ CHF** in consulting revenue at **Junior Entreprise EPFL**.

Education

EPFL - BSc. Computer Science Engineering, Communication Systems **2022 - Present**
École Polytechnique Fédérale de Lausanne - *Graduating 2026*
Relevant Coursework: Algorithms & Data Structures, Software Engineering, Computer Architecture, Object-Oriented Programming in Java, Computer Systems, C Programming, Software Construction in Scala, Enterprise Software, Machine Learning, Probability & Statistics

Baccalauréat Scientifique - Mention Très Bien **2022**
Lycée Descartes, Rabat - *Grades: 20/20 in Mathematics and Physics*

Professional Experience

AI & Software Intern - Kapres Technology (Madrid) **Jul 2025 - Sep 2025**

- Developed **AI-based rehabilitation platform** using **C++** and **Python** for real-time motion tracking and 3D modeling
- Implemented **CNN-based anomaly detection** system for industrial monitoring using **computer vision** and **machine learning**
- Built comprehensive **software pipeline** including data preprocessing, model training, validation, and deployment
- Collaborated on **deep tech systems** for industrial applications, gaining hands-on experience in **real-time processing** and **optimization**
- Worked with multidisciplinary teams on cutting-edge **AR/VR applications** and **motion tracking** technologies

Founder & Lead Developer - SiraEdge (Financial Technology Platform) **Sep 2024 - Present**

- Developed comprehensive **financial technology platform** using **Python** and **advanced algorithms** for portfolio optimization
- Designed **modular software architecture** with automated data management and real-time portfolio simulation
- Integrated **AI assistant** for explaining financial models and portfolio behavior using natural language processing
- Implemented **professional-grade optimization models**: Markowitz, Risk Parity, Monte Carlo, Black-Litterman, and ML-based approaches
- Built **walk-forward backtesting framework** with rolling windows, transaction costs simulation, and comprehensive performance metrics
- Created educational platform democratizing access to professional-grade financial tools and quantitative analysis

Project Manager - Junior Entreprise EPFL **Feb 2024 - March 2025**

- Managed **15+ IT consulting projects**, providing customized software solutions including digital transformation, business analysis, and strategic planning
- Led multidisciplinary teams, contributing to **300K+ CHF revenue** in 2023/2024 through successful project delivery
- Developed and maintained client relationships with startups, SMEs, and global corporations across various industries
- Conducted comprehensive **market analysis** and **competitive intelligence** for client projects while implementing **agile methodologies**

Entrepreneurial Ventures **2020 - 2024**

- **Co-Founder - Libghiti Delivery Service** (May 2021 - Jul 2022): Co-founded seasonal delivery service processing **500+ deliveries** with **95%** customer satisfaction rate
- **Founder - Outside Streetwear** (Apr 2020 - May 2024): Launched contemporary streetwear brand reaching **1,000+ customers** with innovative designs and marketing strategies

Key Projects

Confidential On-Prem Agentic System **2025**

- Built privacy-first LLM assistant for enterprises needing on-prem processing; combined local models, LangChain, PDF.js/PyMuPDF viewers, and vector databases with hybrid routing controls.
- Implemented streaming ingestion, embedded PDF navigation, and admin tooling to toggle between fully local and hybrid inference while preserving compliance audits.

Seekly : Hybrid Movie Recommendation Platform **2024 – Present**

- Architected full-stack movie discovery product (Netflix/Letterboxd-inspired UI, Supabase data stack) that documents experimentation workflow and product decisions.
- Delivered four cached recommendation modules (content, collaborative, social, popularity), synthetic dataset (10k users / 5k movies), nightly recomputations, and evaluation suite (Precision@K, Recall@K, NDCG@K, MAP@K).

- Built comprehensive **recommendation system** with multiple modules: Content-based, Collaborative, Social, and Popularity
- Integrated **Supabase** for data storage and management

Android Application Development - Enterprise Software **2025**

- Developed comprehensive **Android application** using **Kotlin** and **Jetpack Compose** with **Python backend APIs** for enterprise software solutions
- Implemented **modern UI design** with Jetpack Compose components, **database integration**, and **API connectivity**
- Applied **software engineering principles** including MVVM architecture, and comprehensive error handling

SiraEdge Portfolio Optimization Module **2024-Present**

- Shipped seven optimization engines with walk-forward backtesting (252-day rolling windows, transaction costs), scenario analysis, and dynamic risk dashboards.
- Automated ingestion/reporting plus explainability workflows powering SiraChat and investor-facing updates.

ML Microstructure Signals for Financial Applications **2025-Present**

- Advanced **machine learning project** predicting short-term price movements using **market microstructure** analysis
- Implemented comprehensive **order book analysis** with Order Flow Imbalance (OFI), spread, depth, and microprice features
- Developed multiple **ML models**: Logistic Regression, Random Forest, LightGBM, LSTM, and Transformer
- Built comprehensive **backtesting framework** with transaction costs and slippage simulation
- Created **real-time dashboard** for signal visualization and performance analysis
- Integrated **MLflow** for experiment tracking and model versioning

Portfolio Chatbot (Multi-file RAG) **2023-Present**

- Developed ingestion + semantic chunking pipeline (PDF.js, PyMuPDF, metadata filters) plus vector search, reranking, and hallucination guardrails to answer portfolio/product questions with citations.

Achievements

Awards & Distinctions:

- **Olympiades of Geosciences** - 27th Worldwide, 3rd National (2021)
- **International Youth Games** - Selected for international sports competition in Chicago (2020-2021)
- Excellent academic performance with **20/20 in Mathematics and Physics**

Business & Consulting Skills

Project Management: Agile product cadences, roadmap ownership, KPI definition, stakeholder reviews, cross-functional leadership

Consulting: AI strategy workshops, digital transformation, market/competitive intelligence, business case development, executive storytelling

Entrepreneurship: Product incubation (finance, agentic AI, entertainment), go-to-market design, operations scaling, customer success

Soft Skills: Leadership, strategic communication, experimentation mindset, problem-solving, adaptability, mentorship

Technical Skills

Programming Languages: Python, **Java**, **C++**, Kotlin/Jetpack Compose, JavaScript/TypeScript, MATLAB, Scala, C, Assembly, React

AI/ML & LLM Systems: Retrieval-Augmented Generation (RAG), LangChain, local LLM deployment, multi-agent orchestration, PyTorch, TensorFlow, Scikit-learn, LightGBM, MLflow

Product & Data Platforms: Walk-forward backtesting engines, recommendation systems, telemetry dashboards, experimentation tooling, API design

Development Tools: Git/GitHub, Docker, Android Studio, IntelliJ,VS Code, Cursor, Supabase, DuckDB/Postgres, Azure, AWS

Financial Technology: Portfolio optimization (Markowitz, Risk Parity, Black-Litterman, Monte Carlo), scenario analysis, risk management, backtesting frameworks

Core Expertise & Interests

AI Product Leadership: RAG copilots, privacy-first agentic systems, experimentation culture, KPI-driven decision making

Financial & Data Platforms: Portfolio simulation, risk analytics, market microstructure tooling, quantitative reporting

Software Engineering: Full-stack delivery (Python/JS/Kotlin), modular services, API/SDK design, DevEx enablement

Business & Entrepreneurship: Strategy sprints, consulting engagements, venture incubation, stakeholder storytelling

Languages

French: Native **English:** Fluent **Arabic:** Native **Spanish:** Intermediate