Ismail Moudden

✉ ismail.moudden1@gmail.com   📞 +41 782227319   in LinkedIn   🌐 ismailmoudden.com   ⚙ GitHub

Professional Summary

Computer Science Engineering student at EPFL with comprehensive experience in **machine learning**, **quantitative finance**, and **IT consulting**. Proven track record in developing professional-grade financial platforms, leading consulting projects, and implementing advanced ML solutions. Expertise in portfolio optimization, trading, and risk management with hands-on experience in optimization models and advanced backtesting frameworks. Strong background in full-stack development and project management with textbf300K+ CHF revenue generation.

Education

BSc. Computer Science Engineering, Communication Systems, EPFL   **2022 - Present**
École Polytechnique Fédérale de Lausanne (EPFL) - *Graduating 2026*

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

Professional Experience

AI & Software Intern - Kapres Technology   **Jul 2025 - Sep 2025**

- Developed **AI-based psychomotor rehabilitation platform** using **Blender** for 3D modeling and **AR technology** for real-time motion feedback mechanisms
- Implemented **CNN-based anomaly detection** system for solar plant monitoring using drone-collected imagery data
- Built comprehensive **machine learning pipeline** including data preprocessing, model training, validation, and deployment
- Collaborated on **deep tech systems** for industrial applications, gaining hands-on experience in **computer vision** and **real-time processing**
- Documented AI model training pipeline and operational deployment processes for production systems
- Worked with multidisciplinary teams on cutting-edge **AR/VR applications** and **motion tracking** technologies

Founder & Product Lead - SiraEdge (Quantitative & Educational Finance Platform)   **Sep 2024 - Present**

- Conceived and developed **SiraEdge**, democratizing access to professional-grade asset management tools through comprehensive portfolio optimization and educational platform
- Engineered Portfolio Optimization Module implementing **state-of-the-art models**
- Developed advanced **risk management** with dynamic correlation analysis, technical indicators (RSI, momentum, volatility), and multi-objective optimization
- Created comprehensive **educational modules and courses** with hands-on learning approach, teaching portfolio optimization through interactive platform usage
- Developed full-stack platform with **Python backend**, enabling real-time portfolio simulation and educational content delivery
- Integrated **AI assistant** for explaining model outputs and portfolio behavior using natural language processing

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

- Managed **15+ IT consulting projects**, providing customized 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 implementeting **agile methodologies**
- Specialized in **IT consulting**, **digital transformation**, and **business development** strategies

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

Intern - MASEN (Moroccan Agency for Sustainable Energy)   **Dec 2020 - Jan 2021**

- Observed renewable energy projects in collaboration with **R&D department**
- Analyzed innovative technologies **optimizing energy processes** and evaluated their economic viability
- Rotation in **financial division**: studied financing models and economic evaluation of renewable energy projects
- Gained understanding of profitability mechanisms, financial risk, and investment management in renewable energy sector

Key Projects

ML Microstructure Signals **2023-Present**
- Advanced ML project predicting short-term price movements by analyzing **market microstructure** and order book dynamics
- Implemented comprehensive order book analysis with **OFI (Order Flow Imbalance)**, 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 **Streamlit dashboard** for real-time signal visualization and performance analysis
- Integrated **MLflow** for experiment tracking and model versioning

SiraEdge Portfolio Optimization Module **2022-Present**
- Comprehensive platform implementing **professional-grade optimization models**: Markowitz, Risk Parity, Monte Carlo (10,000 portfolios), Black-Litterman, ML Ridge Regression, Hybrid Model, and Custom Metrics
- Professional-grade **backtesting framework** with 252-day rolling windows, monthly rebalancing, and transaction costs simulation (5 bps)
- Advanced **risk management** with dynamic correlation analysis, technical indicators (RSI, momentum, volatility), and multi-objective optimization
- Built modular **Python architecture** with comprehensive metrics (Sharpe, Sortino, Calmar, Stability, Turnover) and automated data management

ML Financial Market Prediction **2022-Present**
- Developed ML projects predicting financial market trends using historical data analysis and advanced models
- Applied **machine learning** techniques for market analysis and trend prediction
- Implemented time series analysis and predictive modeling for financial markets

Technical Skills

Programming Languages: Python, Java, C/C++, JS, React, MATLAB, Scala, HTML/CSS, Assembly, Flutter, Kotlin

Machine Learning & AI: Deep Learning (CNN, LSTM, Transformer), Computer Vision, Time Series Analysis, Predictive Modeling, Market Microstructure Analysis, Trading Signal Generation, Anomaly Detection, Order Book Analysis, Natural Language Processing, AR/VR Applications, Ridge Regression, Logistic Regression, Random Forest, LightGBM

Quantitative Finance: Portfolio Optimization (Markowitz, Risk Parity, Black-Litterman), Walk-Forward Backtesting, Risk Management, Algorithmic Trading, Financial Modeling, Monte Carlo, Dynamic Correlation Analysis, Technical Indicators (RSI, Momentum, Volatility), Multi-objective Optimization, Market Analysis

Software Engineering: Full-stack Development, ML Pipeline Development, API Design, Database Design, Git/GitHub, Docker, SQL/NoSQL, Modular Architecture, Performance Optimization, Test-driven Development

Tools & Technologies: PyTorch, TensorFlow, NumPy/Pandas, Scikit-learn, MLflow, Streamlit, Matplotlib/Seaborn, yfinance, LightGBM, Figma, Blender, Git/GitHub, Docker, SQL/NoSQL

Business & Consulting Skills

Project Management: Agile Methodologies, Strategic Planning, Business Analysis, Client Relations, Multidisciplinary Team Leadership, Process Optimization

Consulting: IT Consulting, Digital Transformation, Market Analysis, Competitive Intelligence, Business Development, Revenue Generation, Client Relationship Management

Entrepreneurship: Business Founding, Brand Management, Operations Optimization, Customer Service Excellence, E-commerce, Marketing Strategy, Strategic Thinking

Soft Skills: Leadership, Strategic Thinking, Communication, Public Speaking, Problem-Solving, Adaptability, Teamwork, Innovation, Mentoring

Awards & Distinctions

- **Olympiades of Geosciences** - 27th Worldwide, 3rd National (2021)
- **International Youth Games** - Selected for international sports competition in Chicago (2020-2021)

Core Expertise & Interests

Machine Learning & AI: Deep Learning (CNN, LSTM, Transformer), Computer Vision, Time Series Analysis, Trading Signal Generation, AR/VR Applications

Quantitative Finance: Portfolio Optimization, Walk-Forward Backtesting, Risk Management, Technical Indicators, Algorithmic Trading, Financial Modeling, Financial Markets

Software Engineering & Consulting: Full-stack Development, ML Pipeline Development, IT Consulting, Strategic Planning, Agile Methodologies, Blockchain, Innovation, Startups, Digital Transformation

Entrepreneurship & Business: Business Founding, Brand Management, Operations Optimisation, Customer Service, E-commerce, Marketing, Strategic Thinking

Languages

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