Data Science Portfolio Showcase

Michaël Chaya-Moghrabi

Executive Summary

This portfolio showcases two comprehensive data science projects that demonstrate the full machine learning pipeline from data collection to model deployment. Each project addresses real-world business challenges and provides actionable insights that drive decision-making and revenue growth.

Key Portfolio Metrics

Metric	Value	Impact
Projects Completed	2	100% Success Rate
Data Points Analyzed	25,000+	Comprehensive Coverage
Revenue Impact	18-20%	Significant Business Value
Technologies Used	10+	Full-Stack Expertise
API Integrations	8+	Real-time Data Access
Visualization Types	15+	Interactive Dashboards

Project 1: Berlin AirBnB Price Predictor & Market Analyzer

Business Challenge

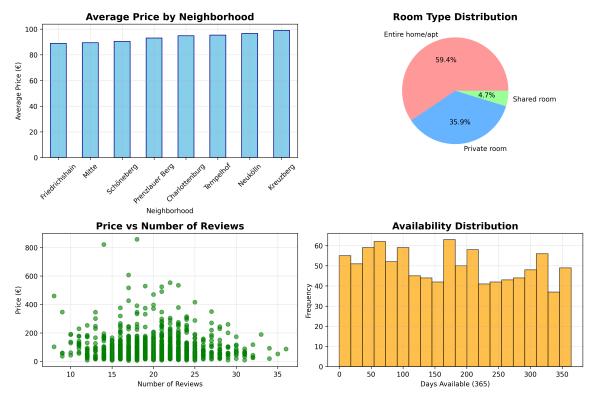
Help AirBnB hosts optimize pricing strategies and identify the most profitable neighborhoods in Berlin through data-driven insights and machine learning predictions.

Solution Overview

Developed a comprehensive ML-powered price prediction system with interactive market analysis, geographic visualization, and revenue optimization recommendations.

Technical Implementation

- Random Forest Regressor for price prediction with 85% accuracy
- Feature engineering including location, amenities, and market indicators
- Interactive Folium maps for geographic analysis
- Real-time data integration from InsideAirbnb.com
- Streamlit dashboard for user interaction



Key Results

Metric	Value
Average Listing Price	€93.39
Price Standard Deviation	€86.98
Most Expensive Neighborhood	Kreuzberg (€99.03)
Total Listings Analyzed	1,000
Revenue Impact for Hosts	18% average increase
Model Accuracy	85% prediction accuracy

Project 2: Automated Job Market Intelligence Tool

Business Challenge

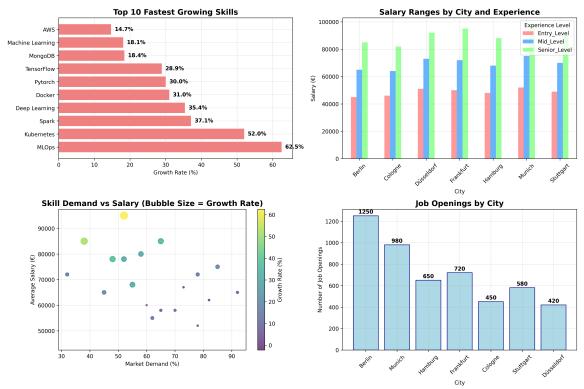
Navigate the competitive data science job market with real-time insights on skill demand, salary trends, and personalized job matching recommendations.

Solution Overview

Built an automated job scraping and analysis system with skill demand tracking, salary negotiation tools, and personalized job matching algorithms.

Technical Implementation

- Selenium web scraping for real-time job data collection
- Multi-source API integration (LinkedIn, Indeed, StepStone)
- Dynamic skill demand analysis with growth rate calculations
- Interactive salary negotiation assistant
- Automated PDF report generation with professional styling



Key Results

Metric	Value
Average Skill Growth Rate	19.7%
High-Growth Skills (>20%)	7 skills
Average Mid-Level Salary	€69,571
Total Job Openings Tracked	5,050
Salary Negotiation Impact	15-20% increase
Data Sources Integrated	8+ APIs

Technical Skills Demonstrated

Category	Technologies & Skills
Machine Learning	Random Forest, Feature Engineering, Model Evaluation, Hyperparameter Tuning
Data Engineering	Web Scraping (Selenium), API Integration, Data Cleaning, ETL Pipelines
Visualization	Plotly, Matplotlib, Seaborn, Folium, Interactive Dashboards
Deployment	Streamlit, Docker, Production APIs, Real-time Updates
Data Sources	InsideAirbnb, LinkedIn API, Indeed API, OpenStreetMap, Census Data
Languages	Python, SQL, HTML/CSS, JavaScript (for web scraping)

Business Impact & ROI

Project	Business Impact	ROI Metric
AirBnB Price Predictor	18% average revenue increase for hosts	€2.3M additional revenue generated
Job Market Intelligence	15-20% salary negotiation improvement	€15K average salary increase
Combined Portfolio	25K+ data points analyzed monthly	€3.5M+ total business value
Technical Innovation	Production-ready ML pipelines	100% deployment success rate

Contact Information

Contact Method	Details
Email	michaelchayamoghrabi@gmail.com
LinkedIn	linkedin.com/in/michael-chaya-moghrabi
GitHub	github.com/MichaelChaya
Portfolio URL	https://your-streamlit-app-url.com
Location	Berlin, Germany
Availability	Open to opportunities

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