BUSINESS INFORMATICS MSc.
Financial Informatics spec.

An interesting field. A profitable profession. An excellent choice.

“How can I invest my money?
How do big companies invest theirs?
What kind of investments are out there?
What is even a risk, how do I measure it?
How does the stock market work?”

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Have you ever wondered about similar questions? At first, the answers might seem to be beyond our reach and kind of mystical, available only to the wolves of Wall Street. The job of a **quant** (quantitative analyst, modeller or developer) is to analyse financial data, come up with clever investment strategies, then implement and test the new algorithms.
In reality, there is nothing mystical about these: with the help of some probability theory, statistics, machine learning and basic programming anyone can learn the ways of financial informatics!

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Financial Informatics

What will you learn?

Algorithmic Forecasting of Stock Price Processes

- Transformations of time series, statistical analysis
- Trend and seasonality analysis
- Stochastic models (ARIMA family)
- Volatility models (ARCH, GARCH)

Financial Investment Planning

- Modern portfolio theory
- Utility theory, CAPM
- Log-optimal portfolios
- Option pricing (CRR, BS)

Software Technologies for Finance Systems

- Lifecycle models, OOP
- Design patterns, architectures
- Server-client development
- Distributed financial systems

Financial Informatics

What will you learn?

Risk Analysis and Management

- Frameworks for risk analysis
- Estimating tail risk
- Portfolio diversification
- Statistical sampling for simulations

Business and Financial Analysis

- Capital expenditure strategies
- Pricing credits, evaluating claims
- Investor behavior analysis
- Types of financial investments

- ✓ You will get to know the qualitative and quantitative analytical methods of finance
- ✓ Every lecture is complemented with laboratory excercises, so you can better understand the applications of the theories
- ✓ We help you develop an analytical mindset
- ✓ You will learn how to invest money strategically
- ✓ Your english will improve a lot – don't worry, an intermediate level is enough to start

Financial Informatics
Some Topics & Partners

Data analysis

- Applications of machine learning for controlling customer support processes
- Applications of Big Data technologies for analysing large volumes of data
- Estimating missing values in time series
- Deep learning on large graphs

Finance

- Predicting the change of foreign exchange values in ForEx markets
- Analysis of algorithmic trading strategies on electronic platforms
- Analysis and planning of optimal investment strategies

Algorithms

- Scalabaility of distributed searching algorithms for maximal cliques
- Optimal processor/machine allocations
- Project shceduling

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