



## Professional Experience

### VTB BANK

- **Quantitative Risk Management Specialist** *February 2020 – May 2021*
  - Took part in the quantitative risks assessment process and behavioural modelling of loans prepayments and deposits withdrawals using Python. Conducted EDA and statistical analysis of raw data. Efficiently utilised Pyspark to create ML pipelines. Used MySQL for data retrieval from Impala and Hive.
  - Worked on developing ICAAP models and internal methodology for implementing IAS 39 and IFRS 9 for hedge accounting purposes. Developed quantitative perspective and retrospective tests for assessing hedge effectiveness. Designed hedging strategies to satisfy IAS 39 requirements.
  - Mentored School of Risk Management students: checked assignments on Python, quantitative modelling, risk-management and finance, lectured and conducted seminars on ML and econometrics. Planned the course content and schedule.

### MERCURY DEVELOPMENT LTD

- **Business Analyst** *October 2019 – February 2020*
  - Worked as a part of the scrum team, in an agile methodology with sprint cycles and daily stand-ups. Used Jira and Trello for task management and communicated directly with developers. Drafted specifications and user stories for OS and software applications on Custom Android devices from scratch. Made flowcharts in draw.io to communicate workflows with the development team.
  - Analysed and clustered big data as a part of the EDA stage of databases migration project after two financial companies' merger. Used hierarchical clustering algorithms implemented in Python to identify similarities and patterns in financial plans. Visualized EDA results for presentation to the customer.
- **Business Analyst Intern** *June 2019 – August 2019*

### STRATEGY PARTNERS GROUP

- **Analyst A2** *July 2019 – October 2019*
- **Analyst Intern** *March 2019 – July 2019*

### VOLGOCEMMACH

- **Work placement** *June 2019*
  - Worked in an accountant assistant role. Analysed financial statements, calculated KPIs, worked in an internal accounting system.

### AMADEUS LTD

- **International Team Internship Program** *April 2018 – June 2018*

## Education

- **MPhil/PhD in Statistics** *October 2021 – October 2025*  
University of Warwick  
Centre for Doctoral Training (CDT) in Maths & Stats
- **Data Engineering, Further Education** *December 2020 – December 2021*  
GeekBrains, Online Education
  - Github repository with coursework projects: <https://github.com/annakuchko/DataEngineering>
- **BSc Business Analytics and Statistics** *September 2017 – June 2021*  
Samara State University of Economics  
Institute of Management Systems, Department of Statistics and Econometrics
  - GPA – 5.0 / 5.0
  - Bachelors' Thesis – "[Dynamic portfolio optimisation based on stock market network clustering](#)"
- **Legal Support of Economic Activity, Undergraduate university courses** *September 2017–December 2019*  
Samara State University of Economics  
Extramural Department

## Research Experience

- **Third-year coursework research project, Department of Statistics and Econometrics of the Samara State University of Economics** – Conducted an analysis of approaches for modelling and predicting crude oil prices. Built HAR-GARCH, VAR and LSTM models and compared their performance on historical data. Purposed a novel way of modelling crude oil prices by including the factors of supply and demand on different energy market products (i.e. coal, electricity, energy, renewable etc.) into the VAR and LSTM models. Clustered time series by countries for dimensionality reduction of panel data.

- **Research project on mapping descriptions of job vacancies to working programs of SSEU in Samara Region, Department of Statistics and Econometrics of the Samara State University of Economics** – Explored the compliance between the curriculum for “Economics” degree programs at SSEU and the potential employees’ requirements listed in the job descriptions for Samara region. Analysed 1985 job descriptions and 286 curriculums. Applied NLP methods for text analysis and interpretation, analysed binary measures of similarity.
- **First-year coursework research project, Department of Institutional Economics of the Samara State University of Economics** – Analysed theoretical concepts of economic multiplier effects and calculated long-term and short-term autonomous expenditures multipliers for Russian economy using regression analysis.

## Competitions & Conferences

- Cup MISIS Case, 1st place – Case on solving topical problems of the gas engine industry using IoT technologies, held by National University of Science and Technology “MISIS”, 2019. MISIS, Moscow, Russia
- Semi-final of the case competition “Iron Entrepreneur” on developing applications for ML solutions, held by National Research Nuclear University MEPhI, 2018. MEPhI, Moscow, Russia
- Awarded 1<sup>st</sup> place in the 4<sup>th</sup> International Forum on Science and Innovations “Digital transformation of the regional economy: challenges, trends, new opportunities”, “Mathematical methods for production optimisation and investment analysis” workshop, 2018. SSEU, Samara, Russia
- Awarded 2<sup>nd</sup> place in the 4<sup>th</sup> International Forum on Science and Innovations “Digital transformation of the regional economy: challenges, trends, new opportunities”, “Resources reproduction for economic growth in the context of globalisation and regionalisation” workshop, 2018. SSEU, Samara, Russia
- Participated in the Russian final of the “Corporate Finance Woman of the Year” held by EY, 2018. EY, Moscow, Russia
- Awarded 2<sup>nd</sup> place in the 1<sup>st</sup> All-Russian Student Economic Congress for Bachelor’s Degree Students, “Economic theory” workshop, 2017. SSEU, Samara, Russia

## Awards & Scholarships

- Nominal EY Scholarship for Future Business Leaders, March 2021, EY Russia
- Government academic scholarship for exceptional research activities granted for September 2018 – January 2019, February 2019 – August 2019, September 2019 – January 2020
- Government academic scholarship for excellent study results granted for February 2018 – August 2018, February 2020 – August 2020, September 2020 – January 2021

## Courses & Certifications

- Survival Analysis in R for Public Health *Imperial College London, Coursera*
- Neural Networks and Deep Learning *deeplearning.ai, Coursera*
- Stochastic Processes *National Research University Higher School of Economics, Coursera*
- Probabilistic Graphical Models 1: Representation *Stanford Online, Coursera*
- Data Analysis in R *Bioinformatics Institute, stepik.org*
- Risk Management School graduate, Diploma of Excellence (1<sup>st</sup> place out of 161 students) *VTB Bank, Higher School of Economics, October 2019–December 2019*  
The curriculum included the following:
  - the most critical parts of CFA & FRM exams (more than 400 learning outcomes, advanced course in econometrics)
  - applied project on credit scoring based on a real-world business case
  - financial machine learning projects in Python (fraud detection, portfolio CVaR modelling with copulas)
  - final exams on subjects studied
- Game Analytics: from Basics to Advanced Strategies *devtodev*
- Mathematics in Game Design: Theory and Practice *devtodev*
- Databases *Coursera, Saint Petersburg State University*
- Organisational project management – Project: “Opening profitable stores for Megafon Retail” *Samara State University of Economics, December 2017 – May 2018*
- Marc Chagall Art School – Diploma with honours, Diploma work on architectural design – defended with excellent mark *September 2010 – May 2014*

## Skills & Proficiencies

- Language: Russian – Native, English – Advanced (IELTS 8.0)
- Programming Languages: Python, R – competent user; MySQL, NoSQL – intermediate user; Octave – beginner user
- BD ecosystem: Spark, Hadoop, Hive/Impala, MongoDB, Airflow
- Statistical Packages: Statistica, Gretl, Demetra+
- ML/DL libraries and frameworks: Pandas, NumPy, Scipy, Pyspark, Statsmodels, Scikit-learn, Pytorch, Dlib, XGBoost, CatBoost, NLTK, Prophet, Scrapy, etc.
- Other software packages: draw.io, InVision Studio, Figma, 1C: Enterprise 8, Adobe Photoshop