

# ANASTASIYA BYELYAKOVA

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## SKILLS

### Programming & Data Science

Python, SQL, Flask, MongoDB, MySQL, PostgreSQL, Pandas, NumPy, Matplotlib, Plotly, Seaborn

### Machine Learning & AI

PyTorch, TensorFlow, Scikit-learn, XGBoost, Keras, Neural Networks, Deep Learning Model Optimization, AI

### Natural Language Processing

spaCy, NLTK, Transformers, Named Entity Recognition, Text Classification, Summarization, LangChain Integration

### Computer Vision

CNN Classifiers, Transfer Learning, Inception v3, Real-time Image Recognition, Background Optimization

### AI Technologies

Gemini, ChatGPT Integration, FAISS Vector Databases

### Cloud & Production

Automated ML Workflows, Model Deployment, Production Systems

## CERTIFICATIONS

Programming for Everybody (Python)  
The Data Scientist's Toolbox  
Python for Genomic Data Science  
Algorithms for DNA Sequencing  
Bioinformatics Methods I & II  
Introduction to Genomic Technologies  
Finding Hidden Messages in DNA  
Nanotechnology and Nanosensors  
Systems Biology Methods  
Python Programming Projects  
SQL Fundamentals  
Diploma in C Programming

## PROFESSIONAL EXPERIENCE

### Data Analyst (ML Focus)

*Kyros AI*

August 2021 - June 2025

Scraped websites to extract data using extensive NLP techniques with spaCy and transformers for text cleaning, NER and summarization

Integrated AI technologies (Gemini and ChatGPT with LangChain) including FAISS vector databases for enhanced data processing, information retrieval and semantic search

Performed advanced image processing for websites including background optimization and intelligent cropping algorithms

Developed predictive models for summer program selectivity using TensorFlow, scikit-learn and XGBoost

Created classification models for categorizing essay examples

Developed advanced chatbot to answer student inquiries

Developed automated Python scripts for large-scale data processing workflows and model deployment

Processed PDF files to extract specific information using AI and TensorFlow tools with intelligent document parsing

### Data Analyst & ML Developer

*DataObrii*

May 2017 - August 2021

Created custom spaCy models for POS tagging and named entity recognition in domain-specific text processing applications

Developed NLTK models for advanced text chunking and natural language processing with production deployment

Built comprehensive web scraping solutions to extract job opening information from company platforms with automated data pipeline

Implemented CNN classifiers for image recognition using transfer learning on Inception v3 (TensorFlow) for COVID detection on lung X-rays, dog breed classification, cosmetics brand recognition, and real-time car counting systems

Developed LSTM neural networks for sales volume prediction based on historical data using Keras with time-series optimization

Created production-ready Flask APIs for MongoDB database access and user authorization systems with scalable architecture

Built LSTM and Random Forest models for financial price direction prediction with feature optimization and performance monitoring

Performed comprehensive statistical analysis of Indian company price datasets using pandas, matplotlib, and seaborn for market trend analysis

## **PhD Student & Researcher**

*Università degli Studi di Siena*

February 2014 - February 2017

Analyzed olive oil samples for acidity compliance with European Regulations No 2568/91 and No 2015/1830 using advanced analytical methods

Performed chemical characterization of olive oil, fruits, leaves, and pomace samples with statistical quality assessment

Conducted antioxidant activity analysis using TEAC assay and spectrometric methods with predictive modeling approaches

Quantified polyphenols content using Folin-Ciocalteu method with machine learning optimization for improved accuracy

Performed ion content analysis (K, Na, Ca, Mg, Mn, Cu, Zn) using atomic absorption spectroscopy with automated data processing

Optimized RH-HPLC-MS methods for polyphenolic compound quantification using statistical optimization techniques

Investigated olive oil production by-products for quality improvement applications with data-driven analysis

## **Teaching Assistant & Researcher**

*University of Geneva*

February 2013 - October 2013

Contributed to research in photoswitchable Na/pH optical and potentiometric sensors with novel analytical approaches

Developed optical sensor nanoparticles for UV-Vis absorption and fluorescence applications using advanced methodologies

Worked on fluorescence-based optical sensors for calcium detection with statistical validation and optimization

## **EDUCATION**

### **Master of Science (MSc) - Analytical Chemistry**

*Taras Shevchenko National University of Kyiv*

2010 - 2012

**Thesis:** "Determination of 1,4-Dioxane by headspace GC with preconcentration by SPE"

**Coursework:** Gas Chromatography, HPLC, Environmental Analytical Chemistry, Physical Methods of Analysis, Nanochemistry, Pharmaceutical Chemistry, Instrumental Analysis, Bioanalytical Chemistry, NMR Spectroscopy

### **Bachelor of Science (BSc) - Chemistry**

*National University of Kiev-Mohyla Academy*

2005 - 2009

**Thesis:** "Modification of PETF membranes by graft-copolymerization of N-VIA initiated by AIBN"

**Coursework:** Biochemistry, Genetics (General & Molecular), Cytology, Histology, Virology, Microbiology, Developmental Biology