Olga Kotova

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Personal Profile Senior Data Scientist and Strategy Consultant at BCG with deep experience translating complex challenges into scalable, data-driven solutions across industries—with particular interest in technology in public good — in fields like health, sustainability-driven innovation across critical infrastructure sectors, governance, and education. I bring a rare blend of technical depth and business acumen, combining advanced machine learning, generative AI, and statistical modelling with strategic insight to drive measurable impact. With a background in physics and a foundation in research, I excel in quickly mastering new domains, identifying high-leverage opportunities, and leading cross-functional teams to turn proof-of-concepts into lasting enterprise solutions. My work bridges analytics and execution, unlocking hidden value in data while empowering organisations to make smarter, faster decisions.

Work Experience

Boston Consulting Group X   **Sep 2021 - Current**
London, UK
BCG is a global consulting firm that partners with leaders in private and public sectors to build, operate, scale, and transfer capabilities that generate the greatest amount of impact by creating the critical mass needed to help organisations mark their breakthrough moments

Senior Data Scientist (Consultant)
- Designed, developed and integrated **20+ machine learning** algorithms and methods across various clients in pharmaceutical, mining, banking and retail industries
    - Developed validation for matched molecular pairs (MMP) using out-of-time and clustering methods, accelerating molecule selection in drug design for a major pharmaceutical company by **30%** (out of 2+ years process on average)
    - Utilised an optimisation engine to determine the best construction strategy for gas transportation links for one of the largest North African energy companies
    - Applied GenAI to automate generic generation of documents (protocols and clinical study reports), resulting in recurring annual savings of **4M€ per 1 document type**
    - Developed a pipeline for processing clinical study information, enabling simulations of the studies in advance to have better prediction of its evolution
    - Developed a machine learning model for determining the propensity of a client to activate brokerage accounts for one of the biggest Russian banks
    - Developed a natural language processing model to classify clients based on chats
    - Developed machine learning models that increased cash loan profits by **10%** and loan interest payment sizes by **4%,** predicted propensity to buy leading to a **10%** sales increase, and identified customer product preferences, resulting in **60%** and **20%** sales growth through telesales and non-voice communications, respectively. Optimised risk-based eLTV for the largest bank in a CIS country
    - Fine-tuned a BERT-based foundation model adapted for biological sequences, integrating gene perturbation data for target identification
- Managed client teams in integrating and scaling successful proof of concepts (POCs) listed above to drive long-term business benefits

- Contributed to companies' diagnostics across business functions to identify gaps and customised data science and machine learning solutions to address them
  - Assessed a chromium mine and factories (on-site) operated by a leading player in the CIS to identify gaps to be addressed with AI. Designed tailored GenAI initiatives
  - Researched generative algorithms for designing optimal compounds in drug design
  - Explored optimisation formulations for assays sequence testing within design-make-test-analyse (DMTA) cycle in drug design
  - Designed digital twin strategies for transport (European government, UK railway)
  - Investigated single-cell multi-omics mechanisms to understand molecular processes and explored AI methods for various implementations

The Oxford Union   **Nov 2020 – Jun 2021**
Oxford, UK
Sponsorship Officer & Secretary's Committee Officer
- Engaged in attracting sponsors to support events and debates and worked on inviting competitive debaters and arranging society's events

Lomonosov Moscow State University - Department of Physics   **Jan 2017 – Aug 2020**
Moscow, Russia
Research Assistant
Completed and published the results with the fellow scientists on:
- Comparative Analysis of Artificial Neural Networks' teaching methods in solving inverse problems of optical spectroscopy
- Application of Wavelet Neural Networks for monitoring of extraction of carbon multi-functional medical nano-agents from the human body and
- Determining the Photophysical Parameters of NaGdF4:Eu solid solutions in suspensions using the Judd—Ofelt Theory
President of the Student Union and Founder of a school "Factorial"
- Organised university events such as mathematical Olympiads, protected student rights, engaged in voluntary work, and improved learning environment
- Founded (with a classmate) a free school for Moscow school children. We enrolled >200 pupils and attracted > 35 students to teach mathematics and physics in 2 years.

<u>Education</u>
2016-2020 Bachelor of Science in Physics (GPA 5.0/5.0), Lomonosov MSU, Moscow
Thesis: Determining the Photophysical Parameters of NaGdF4:Eu solid solutions in suspensions using the Judd—Ofelt Theory
2020-2021 Master of Science in Social Data Science, University of Oxford, Oxford
Thesis: An analysis of e-governance in corrupted systems: Russian case study

<u>Accomplishments</u>
- The best undergraduate student of the year 2019, Lomonosov MSU
- <u>Interviewed Mr. Jack Ma</u> (Alibaba founder) who visited Lomonosov MSU, 2019
- <u>Moscow Government Fellow</u> for Special Academic Successes, 2016-2020
- Former debater at the Oxford Union, participated in the debate on "Immortality" (genetic engineering, life preservation, ethics)

<u>Skills</u>
Python, SQL, React, machine learning, network analysis, statistical analysis, generative AI, Tableau, Mendeley, MS PowerPoint, problem-solving, public speaking