Anton Potapov

Data Analyst, LLM Engineer, Python/C++ Developer

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Summary: I am a proficient IT professional with a 3 years of experience in ML and backend development. My journey started with competitive programming, which ignited my passion for C++ and Python. Through hands-on projects, including those supported by Huawei, I've refined my expertise in backend development. At KPMG, I've streamlined data analysis using tools like Pandas and Machine Learning, creating impactful solutions. From a machine learning product that optimizes operations to tools simplifying data model interpretation, I'm committed to innovative tech solutions. **I'm good at:**

- researching, validating and reviewing existing code even if it's not well documented (e.x. new open source libraries)
- analysis, decomposition, estimation and implementation of new features and algorithms (linear/parallel/distributed)
- deploying services on production environment (well familiar with Linux) and integrating CI/CD pipelines
- working with low level computations (C/ASM) and high level math such as the one needed for ML/DL/statistics

Skills & Tools - Backend Development: C++, C, Python, REST, AWS **| Data Engineering:** Pandas, PostgreSQL, Openpyxl, win32com **| CI/CD:** Git, GitHub Actions, Docker **| LLMs/NLP Tasks:** LLMs, Transformers, Bert, GPT, T5, Pytorch, numpy, LlamaIndex, ChromaDB, FAISS, HuggingFace, langchain, Auto-GPT, NLTK, Spacy, Gensim, Natasha **| Parallel/Distributed Computing:** PThreads, OpenMP, MPI, CUDA, RabbitMQ

PROFESSIONAL EXPERIENCE

KPMG (August 2020 - June 2023)   Moscow, Russia
KPMG, part of the Big Four, is a global professional services firm offering audit, tax, and advisory services

Data Analyst, LLM Engineer
Development of tools for automation of analysis and control of project data at KPMG. This involves employing Python automation to extract data from relational models and perform analysis through Pandas queries. I integrated advanced LLM technologies like HuggingFace Transformers and LangChain for NLP tasks such as text summarization and document question answering. Additionally, I developed various tools for automating data interactions, including automatic data visualization using libraries like NetworkX and Graphviz. Among key results:

- Proposed an idea, designed and developed MVP of a machine learning product for meeting summarization on local resources in 10 days reducing human hours of a department from 600 a month to just 70 hours a month
- Designed and developed a tool for Excel data models visualization that reduced the number of hours required for certain data errors detection and time for acquainting individuals with a new data model from 2 days on average to just a couple of minutes of processing time
- Developed a versatile Monte Carlo simulation tool tailored for Excel-based models, enabling efficient risk analysis adaptable to various inputs, thus reducing associated costs for the company from thousands of dollars yearly for designated software to basically being free.

Research Computing Center of Moscow State University (September 2021 - present)   Moscow, Russia
The Research Computing Center of Moscow State University is a leading institution in computational research, providing advanced technological solutions and expertise for diverse scientific domains

C++ Developer
Development of optimized C/C++ backend implementation for the GraphBLAS standard as part of a grant from Huawei. This includes developing optimized graph algorithms implementations for the specific architecture of processors, as well as infrastructure for testing them. Among key results:

- Came up with and implemented a series of optimizations for matrix-vector multiplication that led to a 70% speed up of BFS algorithm compared to its previous version
- Executed proof-of-concept by developing a feature enabling delayed application of graph modifications to a matrix, showcasing minimal asymptotic requirements for each update operation

EDUCATION
Lomonosov Moscow State University   Moscow, Russia
Bachelor's degree in Applied Mathematics and Computer Science (2019 - 2023)

CO-PROFESSIONAL LEADERSHIP
- At KPMG, I actively delivered numerous presentations, contributing to neural network technology training sessions and showcasing tools developed by our team
- I achieved victory and placed highly in various mathematics and programming competitions, which granted me direct admission to the tuition-free program at the university, exempting me from entrance exams

ADDITIONAL INFORMATION
- Languages: English (C1, Advanced, lived in English-speaking country), Russian (Native), Serbian (Elementary)
- Hobbies: I'm a music producer proficient in playing guitar, bass, drums and MIDI
- I also have experience in working with Frontend Development as part of my pet projects in which i worked with React library with NextJS and TailwindCSS frameworks.