**LEV SELECTOR, Ph.D.**

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**SUMMARY:**

* Artificial Intelligence AI, Large Language Models LLM, Embeddings, Vector Databases, LangChain, Machine Learning, Data Science, Analytics, Expert, Leadership, Team Builder
* Ph.D. in mathematical modeling and computer simulations
* Experience of building teams of engineers and data scientists (hiring, training, and managing)
* 15+ years of experience with high-volume data processing, analytics, and modeling
* Proven track record of building data and analytics systems from scratch, and delivering them on time
* Full cycle development from requirements and planning to architecture & implementation
* Experience in different areas - Financial, Advertising, e-Commerce, Media, Publishing, Crypto
* Data Engineering on clouds (AWS, Azure, GCP) and on-prem, ETL, APIs, big data, data mining
* SQL databases, SQL Data Warehouse, key-value stores (like Redis),
* Web applications, and business intelligence & analytics
* Mathematics and Finance: Ph.D. (Math. Modeling), Advanced Calculus (Math Analysis), Linear Algebra, Vectors & Tensors, Theory of Complex Variables, Differential Equations, Partial Differential Equations, Differential Equations in Mathematical Physics, Probability & Statistics, Statistical Radiophysics (including time series analysis and digital pattern recognition algorithms), Optimization, Monte Carlo Simulations, Numerical Methods, Machine Learning, Deep Learning, NLP, Transformers, Generative AI, LLMs
* Programming & Data Science Tools: Python, Pandas, NumPy, SQL, ETL, Scikit-Learn, NLP/NLTK, Huggingface tools, AWS SageMaker, TensorFlow, Hadoop, Perl, Go (Golang), Javascript, C/C++, Java, Excel VBA, databases (PostgreSQL, MySQL, Vertica, Netezza, Google BigQuery, MongoDB, Sybase, DB2, Oracle, MS SQL), Web Apps, Cloud (Amazon AWS, Azure Synapse Analytics, Google, IBM)

**PROFESSIONAL EXPERIENCE:**

**January 2022 - present - Enterprise AI Solutions, President**

* Large Language Models (LLM) for business - local and on cloud
* Custom private conversational interfaces for business systems
* Talk to your data - cognitive search
* Text generation (generate contracts, instructions, summaries, q/a)
* LLM quantizing, fine-tuning. Prompt-engineering. Self-verification
* RAG (Retrieval Augmented Generation), embeddings, vector database, hybrid database, PostgreSQL
* Huggingface tools, models & APIs, llama.cpp, LangChain, OpenAI, ChatGPT, LLaMa, Ollama, LMStudio

**November 2022 - Sept 2023 - CTO & Co-Founder, BixBeta**

* AI-enabled crypto accounting and payment/donation
* Generative AI to add Natural Language Interface to analytics and reporting

**November 2020 - 2022 - Data Science Practice Lead, Redapt**

* Building, training, and managing a team of data scientists
* Data architecture in the cloud (Azure, AWS, Google), Apache AirFlow, ADF, SQL Data Warehouse
* Hands on Machine Learning modeling in the cloud (Azure Machine Learning Studio, Azure Synapse Analytics, Azure Cognitive Search, Python, Scikit-Learn, AutoML, predictive modeling, regression, classification, time series forecasting, anomaly detection)

**February 2020 - November 2020 - Selectorweb, consulting projects**

* National Debt Relief ( [https://www.nationaldebtrelief.com](https://www.nationaldebtrelief.com/) ) Machine Learning and ETL in production
* Provisions Group ( [https://provisionsgroup.com](https://provisionsgroup.com/) ) Machine Learning with AWS SageMaker and R
* Vara (now [https://vareto.com](https://vareto.com/)) Data Integration for analytics

**December 2019 – February 2020 - Head of Machine Learning And AI, Digital Labs, Capco**

- Built, trained and managed a team of data scientists, hands on modeling using Python, AWS, Linux VMs, Mainframe Test Automation project using Python, GnuCOBOL, libFuzzer, antlr4, Neo4j

**December 2018 – September 2019 - VP of Data Science, Head of Analytics - National Debt Relief, LLC** - Built, trained and managed a team of data scientists; created architecture on Linux server(s) on Azure cloud to run hundreds of jobs (ETL, data processing, Machine Learning); building visualizations using Salesforce Einstein Analytics Dashboards and Jupyter notebooks. Azure SQL Data Warehouse, Python, Nginx web server, Gunicorn gateway server, Scikit-learn, Random Forest, XGBoost, H2O.ai)

**June 2018 – December 2018 – Senior Data Scientist at Vanguard Group via Tata Consulting Services** - Machine Learning and Artificial Intelligence, Scikit-Learn, AWS SageMaker. Designed architecture for data migration into the cloud (AWS) for analytics, developed data structures and lambda functions. Managed deployment. Trained a team in ML and AI (hands-on and lectures). Built models for cybersecurity & anomaly detection.

**June 2017 – June 2018 – Selectorweb, consulting projects** (Clients: Galvanize, SaleZoom, JKCF) -

Machine Learning, AI, Analytics, working with imbalanced data, NLP (Natural Language Processing), Python, Scikit-Learn, NLTK, Pandas, Numpy, TensorFlow, Amazon AWS (EC2, S3), Google Cloud (BigQuery, MySQL), IBM Cloud (IBM Watson – Natural Language Understanding for Sentiment Analysis, Tone Analyzer, Personality Insights).

**November 2014 – June 2017 - Penguin Random House, Consultant** – Trained and led the team to build systems in Business Intelligence/Analytics, Big Data Collection and Integration (ETL/ELT), Machine Learning and AI, Reporting. Python, pandas, Netezza, SQL, Redis, AWS, Linux. Created system for high-volume parallel web scraping at ~2 Mln pages/day. Organized "Deep Learning Book Club" to promote the use of Machine Learning and AI in-house; worked with several business groups to create various data feeds and tools to clean and ingest data; created Python framework to work with IBM Netezza DB; wrote analytics tools for price analysis and estimation.

**April 2012 - April 2014 – AppNexus, Inc, Consultant, Financial Data Analytics** - Designed and implemented a billing and reporting framework for processing trading data (~60TB/day) across 2000 clients with custom rules (43 thousand lines of python code, self-recoverable ETL processes, health-monitoring, auto-back-testing to validate both data and code). Designed business intelligence & analytics systems (multiple reports, graphs, analytics database - MySQL). Linux, Python, Pandas, Vertica, Mysql, Hadoop, Hive, Git. Reduced data extraction time for 30 Bln data rows from 3 hours to 7 minutes. Trained and managed a team of developers. Taught courses on python/pandas/database/analytics.

**1994-2012 - multiple "Wall Street" consulting projects:**

* **Goldman Sachs**
* **Morgan Stanley**
* **JPMorgan Chase**
* **Citigroup**
* **Merrill Lynch**
* **Waterhouse Securities**
* **CantorFitzgerald/Espeed**
* **CSFB**
* **HSBC**
* **WorldQuant**

Data Processing and Analytics using Unix, Perl, SQL (Sybase, DB2, MySQL),

data preparation, data load/migration, ETL,

Web design (HTML, CSS, Javascript), C/C++, Java, Jython, Excel VBA

**1991-1994 Columbia University. Staff Associate** - Mathematical modeling of dynamics of organic molecules. Distributed calculations (unix, C/C++), analytics and graphics using IGOR software on Mac.

**1981-1991 National Cardiology Research Center, Moscow, Russia. Researcher** - Real time data acquisition and computer processing in neuro-physiological experiments. Pattern recognition, classification, computer simulations of nerve impulse generation and propagation along C-fibers. Partial differential equations, Hodgkin-Huxley model, Crank-Nicolson & modified Runge–Kutta methods. Hardware and software design of medical equipment

**EDUCATION:**

* 1988 Ph.D. in Mathematics (modeling of nervous coding), Moscow Institute of Physics and Technology
* 1981 MS in Automation, Moscow Institute of Physics and Technology (MIPT), majoring in computers, electronics and biophysics, Diploma - computer simulation of nerve activity

**LICENSES, CERTIFICATIONS, COURSES:**

Coursera courses (Machine Learning, Deep Learning, Generative AI, Google Cloud). Data Analysis with Python and Pandas. SEC Registered Representative ( Series 7, Series 63 ). CQF (Certificate in Quantitative Finance). Advanced Object Oriented Perl. C++ for Quantitative Finance. Advanced Excel for Financial Applications. Java 2 (Sun)

**REFERENCES:**

..<http://levselector.com/LevSelector_recommendations.docx>