Stanislav Jirak

SENIOR DATA SCIENTIST

✉ jirakst@gmail.com   📍 Prague, Czechia   📞 +420-777090822

Profile

As a seasoned data professional, Stanislav brings forth a rich blend of experiences in data engineering, data analytics, and a deep-rooted expertise in data science and machine learning, holding certifications in DataBricks and Spark, Data Science, and AI Engineering. His proficiency is evidenced by his contributions to high-profile projects, including the development of virtual assistants 'George' and 'Kate,' and collaborations with major financial institutions across Central Europe. Stanislav's comprehensive understanding of complex data science methodologies and analytics is instrumental in his track record of delivering innovative, data-driven solutions that greatly enhance business performance.

Beyond his professional endeavors, Stanislav excels as a highly regarded data science instructor, consistently earning praise for his teaching abilities. He effectively imparts his profound knowledge in both practical and educational aspects of data science.

Stanislav's dedication to his field has been acknowledged through various accolades, including awards in a Blockchain competition and a contest utilizing the GPT-3.5 virtual assistant by OpenAI. Furthermore, he actively contributes to the CityDAO blockchain community, showcasing his active engagement and commitment.

Interesting Publications

Harnessing Reinforcement Learning in a Multi-Agent System with Game Theoretical Concepts

May 2023

The article presents sophisticated techniques, including shared memory, adaptive learning, and epsilon-greedy exploration, utilized in a Multi-Agent Reinforcement Learning System (MARLS).
I calculate Nash Equilibria for this asymmetric game, which features both cooperative and competitive aspects.

Temporal Classification of Backscattered Satellite Data

April 2023

This article utilizes time series clustering of satellite data and an experimental transformer-based algorithm to precisely classify rice fields in Vietnam, securing the front position in the EY Open Data Competition.

A Curious Phenomenon of Non-Deterministic Behavior

January 2022

This case study discusses the intriguing phenomenon of non-deterministic behavior encountered during the development of the virtual banking assistant KATE, which employs a transformer-based architecture.

Won Competitions

prg.ai, Prague

May 2023

Our GPT-4 based Large Language Model virtual assistant, fine-tuned on custom documents and utilizing a vector-search database for context memory with queries exceeding the token limit, earned us a special award from prg.ai.

EY Open Challenge, Hybrid

February 2023 — March 2023

Utilizing satellite data, we developed a machine learning algorithm leveraging time-series clustering to classify rice fields and predict yields in Vietnam, an endeavor that secured us the top place.

OpenAI GPT-3 Hackathon, Remote

June 2022 — June 2022

In the OpenAI GPT-3 Online Hackathon hosted by Deep Learning Labs, we clinched the top ranking by developing a virtual dermatologist using state-of-the-art GPT-3 technology, fine-tuned using data from public websites and Reddit for accurate real-world performance, underscoring the potential of AI-driven solutions to provide accessible and cost-effective healthcare consultations in skin care.

KB Internal Competition, Prague

May 2022 — May 2022

By innovating and implementing an advanced embedding technique, I significantly boosted the feature-loading and encoding capacity in memory, surmounting the common memory limitations in feature encoding with novel methods that encode more features into vectors without sacrificing algorithmic efficiency, thereby driving the company's technological progression and success through pioneering data science solutions.

HackToTheMoon, Prague

November 2019 — November 2019

In collaboration with a team, I leveraged Blockchain technology to develop and deliver a secure, innovative solution featuring a democratic election process designed using Janecek's voting method, demonstrating proficiency in secure Blockchain and Rust-based smart contract development, and earning a first-place ranking in the competition.

Profireal Internal Competition, Hybrid

March 2023 — May 2023

In a high-profile competition aimed at identifying and implementing business improvement solutions, I demonstrated exceptional technical proficiency by using advanced machine learning techniques to create a default scoring engine, which classified clients by financial risk through training a sophisticated LightGBM model on client data, thereby automating financial calculator assignment based on assessed risk levels, ultimately enhancing business outcomes and proving the value of data science techniques.

Personal Projects

IdeaGPT

May 2023 — June 2023

IdeaGPT is an AI-powered comprehensive search engine that delivers images and pertinent search results. Unlike ChatGPT, there are no limitations, allowing it to respond to any question. With the introduction of Google BART and plug-ins to ChatGPT, the project might get open-sourced.

The development version is available at: *ideagpt.streamlit.app*

Blocklane, Hybrid

June 2019 — April 2020

- Co-founded a startup in the cryptocurrency market, emphasizing technology-driven solutions.
- Achieved consistent trading profits until the COVID-19 market crash in April 2020.
- Designed and implemented Python-based deep learning algorithms for automated trading.
- Developed Python scripts to execute arbitrage strategies across multiple crypto exchanges.
- Engineered smart contracts on Blockchain and DeFi platforms for enhanced functionality and security.
- Secured funding from investors to support startup growth and operations.
- Recruited and managed a skilled team to drive the company's success.
- Spearheaded strategic planning, operational setup, and ongoing business development efforts.

Employment History

Senior Data Scientist, Ernst&Young, Prague

March 2023 — Present

- Participating in pre-sales engagements for clients across various sectors, including energy, insurance, and government, delivering technological insights and solutions
- Mentoring junior team members by providing guidance and assigning tasks to promote their professional growth and increase their value to the company.
- Played a leading role in a competition that resulted in a successful win, showcasing initiative, determination, and ability to work under tight deadlines.

Big Data Scientist, Adastra Digital, Prague

January 2022 — March 2023

As a Senior Data Scientist at Adastra Digital, I took a part in numerous projects as below, both with clients within and outside the European Union. I took the lead in establishing and strengthening the internal expertise in Databricks, delivering seminars and presentations on Spark and Databricks in Data Science at the University of Economics. Additionally, I successfully implemented an automated screening system for evaluating potential candidates and developed comprehensive test questions in the areas of data science, Spark, and Python.

1. KB Bank *(Societe Generale)*

- Developed and maintained a solution to classify client transactions in real-time and batch processing.
- Developed a solution for predicting clients' account balances by month-end.

2. Valeo

- Collaborated on designing infrastructure for processing autonomous vehicle data.
- Served as Business Analyst to process the requirements and communicate with the client.

3. TBC - *Major Bank in Georgia*

- Developed a default scoring engine using LightGBM and an anti-fraud scoring engine using IsolationForest.
- Served as Data Owner, maintaining close communication with the business.

4. GRC - *Customs Administration of the Czech Republic*

- Contributed to a pilot project for data migration into the cloud.
- Performed BI analytics to optimize processes and decision-making.

Data Science Tutor, Software Development Academy, Remote

January 2022 — Present

- Specialize in teaching Deep Learning and advanced data science topics.
- Lead interactive sessions and develop curriculum for students with varying levels of expertise.
- Guide students through real-world applications of data science techniques, ensuring a solid foundation for future professional growth.
- Conduct personalized Python interviews to prepare job seekers for data science roles.
- Provide valuable feedback on coding, problem-solving, and communication skills.

Data Scientist, TIP IT Solutions, Prague

May 2020 — January 2022

1. KATE - *CSOB Bank (KBC Group)*

- Developed KATE, a virtual assistant that goes beyond a traditional chatbot, providing a comprehensive user experience.
- Utilized and extended the RASA framework, developing custom NLP components to enhance KATE's language processing capabilities.
- Collaborated with colleagues from KBC Bank in Belgium to share insights and ensure consistency in approach.
- Supported the Czech use-case teams by offering technical guidance and addressing specific requirements.
- Employed a diverse set of technologies, including Python, Docker, Kubernetes, and AWS cloud, to deliver a robust and scalable solution.

2. GEORGE - *Ceska Sporitelna Bank (ERSTE Group)*

- Analyzed data from GEORGE, the virtual banking assistant, to classify user feedback, and areas for improvement.
- Utilized data-driven insights to optimize the performance of the virtual banking assistant, ensuring it met customer needs and expectations.
- Regularly communicated with stakeholders to report on GEORGE's progress, key performance indicators, and future enhancements.

3. Keboola&DataBricks - *Ceska Sporitelna Bank (ERSTE Group)*

- Collaborated on a strategic initiative to integrate JIRA system data with an existing data warehouse solution.
- Designed and supervised the implementation of the technical solution, ensuring seamless integration.
- Coordinated and managed cross-functional teams involved in the initiatives, fostering effective collaboration.
- Ingested the data into Databricks and perfomed analysis in the environment
- Eventually, implemented Keboola as the central platform for business analysis and data science.

Data Engineer, ProfiCredit, Pardubice

June 2017 — June 2019

- Primarily focused on developing and maintaining a global data warehouse solution, ensuring its performance and scalability.
- Conducted data analytics to derive insights and improve decision-making processes within the organization.

- Developed a Default Score Engine for a financial institution, which automatically assigned a financial risk score to clients based on their predicted ability to repay a loan.
- Leveraged data-driven methods and advanced analytics techniques to enhance the accuracy and effectiveness of the Default Score Engine.

BI Developer, Mikroelektronika, Vysoke Myto

May 2016 — May 2017

- Developed efficient SQL Stored Procedures to handle complex data processing tasks and optimize database performance.
- Created a wide range of reports to provide actionable insights for clients and stakeholders, enabling informed decision-making.
- Utilized MS SQL Server and SSRS (SQL Server Reporting Services) to develop, deploy, and maintain reporting solutions tailored to specific needs.

PCB Designer, AWOS, Pardubice

October 2015 — May 2016

- Designed Printed Circuit Boards (PCBs) for a diverse clientele, meeting unique specifications and requirements.
- Had the privilege of designing the main boards for the first European electric motorbike, based in Austria, showcasing expertise in innovative and sustainable solutions.
- Collaborated with clients and engineering teams to ensure that the PCB designs met performance, reliability, and manufacturability standards.

Education

Bachelor, Brno Technical University, Brno

September 2012 — August 2015

- Studied microprocessor design, gaining a solid foundation in the principles and techniques related to the design and development of microprocessors.
- Acquired a comprehensive understanding of electrical engineering concepts, preparing for a successful career in the industry.
- Engaged in practical, hands-on learning experiences to further develop technical skills and real-world problem-solving capabilities.

Certifications

Azure AI Engineer, Microsoft

April 2023 — April 2024

Azure Data Scientist Associate, Microsoft

September 2022 — September 2023

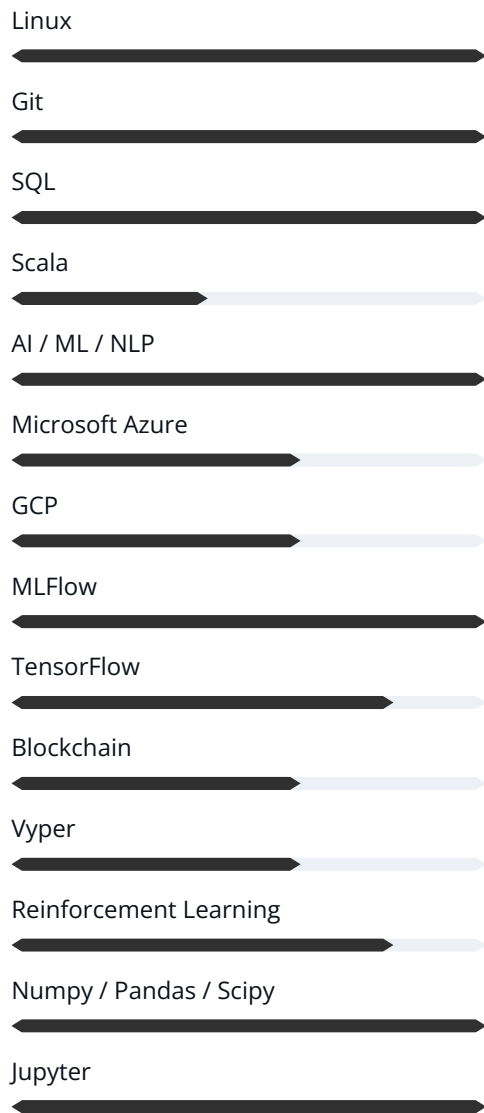**Developer for Apache Spark 3.0, DataBricks**

February 2022 — February 2024
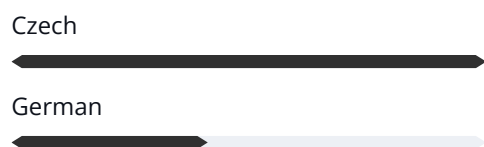
Data Science Workshop, Adastra Digital

November 2018

Implementing DWH Solution, GOPAS

December 2017

Skills

Linux	Docker
Git	Data Analysis
SQL	Python
Scala	PySpark
AI / ML / NLP	DataBricks
Microsoft Azure	Amazon AWS
GCP	Hadoop
MLFlow	Kubernetes
TensorFlow	ETL
Blockchain	Solidity
Vyper	Multi-Agent Systems
Reinforcement Learning	Game Theory
Numpy / Pandas / Scipy	Matplotlib / PyPlot / Seaborn
Jupyter	

Languages

Czech	English
German	

Links

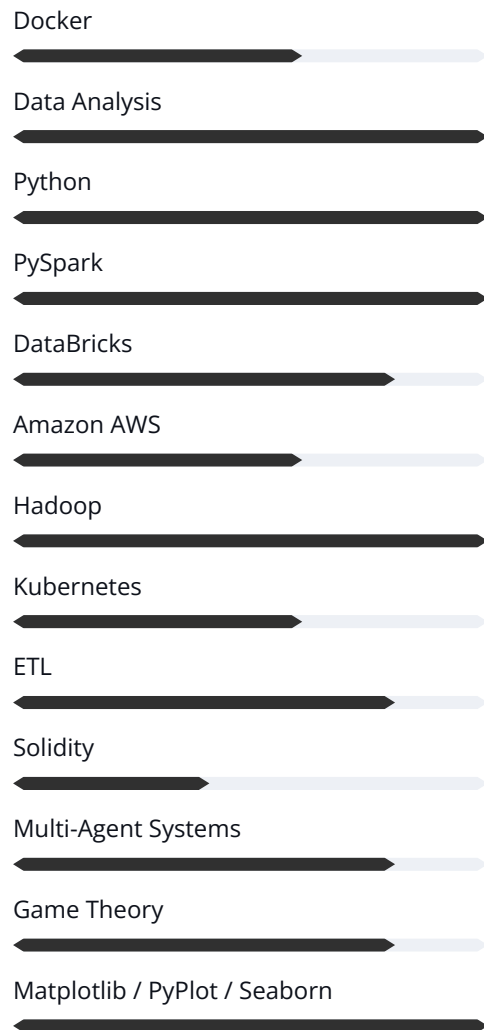LinkedIn   GitHub   Kaggle   Instagram

Hobbies

Traveling, Photography, Blockchain, Formula 1, Open-source, Hiking, Trading, AI, Physics & Universe, DIY electronics projects, Meet-ups, Couchsurfing, Gaming, Blogging

References

KB (Societe Generale)	**CSOB (KBC Group)**
Ceska Sporitelna (ERSTE Group)	**TBC**
Valeo	**GRC**

Veolia   **Generali**