

## Contact

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## Top Skills

Python (Programming Language)

PostgreSQL

Python/Django

## Languages

English (Professional Working)

Slovak (Native or Bilingual)

## Certifications

Introduction to Mathematical Thinking

# Alexander Benko

Software / Python / Data Engineer

Bratislava, Slovakia

## Summary

As a Senior Python Developer, my career has been defined by a deep engagement with a broad spectrum of software engineering projects, from the intricacies of algorithmic trading platforms to the robustness required for enterprise-grade CRM and CMS systems. My proficiency with Django and REST APIs has been the cornerstone of my approach, enabling me to construct and scale dynamic SaaS solutions. My work encompasses the development of a stock options trading system, the seamless integration of cryptocurrency into business models, and the creation of comprehensive management systems for e-commerce and sports event organizations.

Recently, I've expanded my expertise into Natural Language Processing (NLP) and Natural Language Understanding (NLU), marking my foray into machine learning and artificial intelligence. This new endeavor focuses on developing intelligent systems that interpret and analyze human language, enhancing my existing software solutions. This integration of NLP/NLU enriches my skill set and opens up innovative avenues in AI-driven applications.

Code: <https://github.com/axdel/>

Books: <https://www.goodreads.com/review/list/23384227-alexander-benko>

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## Experience

Infinitt s.r.o.

Software Developer

January 2023 - Present (11 months)

Bratislava, Slovakia

My role involved assisting in the design and implementation of a Python testing SaaS, including the development of the pytest plugin pytest-testmon. For more details, visit <https://www.testmon.net/>.

Tech stack: Python/Flask/FastAPI, Docker

## Tradingsystem (personal/weekend project)

Software Developer

January 2021 - Present (2 years 11 months)

Bratislava, Slovakia

Tradingsystem is a robust stock and options algorithmic trading platform featuring state-machine-like trading algorithms through the InteractiveBrokers API. It involves extensive 24/7 data scraping from sources like Benzinga, InvestorsHub, NASDAQ, OTC Markets, Trading Economics, Yahoo Finance, and Interactive Brokers, utilizing TOR and/or VPN(s). The system ensures all data is meticulously cleaned and organized, enabling the provision of coherent, up-to-date information for informed price-action trading decisions. Key submodules include EconomicEvents, MarketSnapshots, SocialScanner, StockFundamentals, StockOptions, and StockSignals, alongside tracking of macroeconomic and company-specific unusual events. The system leverages the IB Gateway API, adapted into a synchronized database-driven request/response service, contrary to its default asynchronous nature. As a solo developer with over a decade of trading experience, the system is in continuous development, requiring extensive testing.

Screenshots / Video: <https://github.com/axdel/linkedin/tree/master/tradingsystem>

Example strategy: <https://github.com/axdel/linkedin/blob/master/tradingsystem/algotrade.py>

Tech stack: Debian, Nginx, Unicorn, Python/Django, PostgreSQL, Redis, IB Gateway, Bootstrap

## 01People

Software Developer

August 2020 - December 2022 (2 years 5 months)

Bratislava, Slovakia

I was tasked with integrating Cardano cryptocurrency into various crypto-centric projects. My responsibilities included managing the cardano-node (with CLI/API/wallet), overseeing cardano-db-sync (a tool for synchronizing the

blockchain with a PostgreSQL database), and implementing features such as Cardano deposits, withdrawals, Native Token minting, NFTs, Royalties, and a UTxO dust sweeper, along with other Cardano Improvement Proposals (CIPs). These implementations were utilized across NFT marketplaces (<https://rull.world/>), auction platforms, and for the creation of custom tokens for diverse marketing initiatives, including real estate tokenization (<https://rull.estate/>), among others. While part of a broader development team, I independently spearheaded the entire Cardano segment.

Tech stack: Docker, Nginx, uwsgi, Python/Django/RESTFramework, PostgreSQL, Redis, Cardano (everything that exist, from seeds/keys, wallets, low-level transactions, UTxO model, to NFT tokens with royalties)

### InGym s.r.o. (personal/weekend project)

Software Developer

January 2016 - December 2022 (7 years)

Bratislava, Slovakia

InGym is an event and course management system designed for sports events and clubs. It encompasses a suite of features including user and coach management, payment processing, wage distribution, course and season scheduling, attendance tracking, and a credit system. The system automates bank payment matching and supports newsletters, internal messaging, and notifications. It has already attracted several paying customers. This project, developed as a one-man initiative, is not yet publicly released.

Tech stack: Debian, Ngnix, Unicorn, Python/Django, PostgreSQL, Redis, Bootstrap, jQuery (yes old school)

### BENALEX PLUS

Software Developer

May 2019 - August 2020 (1 year 4 months)

Bratislava, Slovakia

My responsibility was to architect, develop, deploy, and manage the company's integrated e-commerce and ERP intranet system. This system unified the e-shop, MRP accounting software, warehouse, and retail data, facilitating a comprehensive digital overview and streamlined management of the company's operations. Key projects included automating the invoice matching process with TatraBanka, creating an e-shop with TatraPay payment integration, and developing tools for monitoring warehouse inventory and generating sales and revenue reports. A significant challenge was reverse-

engineering the internal Firebird database of the accounting software to ensure seamless data manipulation without compromising system integrity. This led to the implementation of a complete structural integrity check within the codebase to validate compatibility with new software releases. This project was a solo endeavor.

Screenshots / Example code: <https://github.com/axdel/linkedin/tree/master/benalexplus>

Part of MRP python wrapper: <https://github.com/axdel/linkedin/blob/master/benalexplus/mrp.py>

Tech stack: Debian, Windows Server, Nginx, Gunicorn, Python/Django, PostgreSQL, Redis, Bootstrap, MRP (accounting software) with its Firebird (SQL DB)

**Infini s.r.o.**

**Software Developer**

May 2016 - May 2019 (3 years 1 month)

Bratislava, Slovakia

As a Python backend developer contracted with Infini s.r.o., I served a pivotal role for the Finnish telecommunications company DNA (<https://www.dna.fi/>). Over the course of three years and one month, my responsibilities encompassed the development of new features and the resolution of production issues across a suite of web applications, including e-commerce platforms, order management systems, customer self-service portals, and CRM and administrative applications. I collaborated within a dynamic team environment, comprising 20 developers and 11 QA specialists, to drive continuous improvement and innovation.

Tech stack: Docker, Nginx, Python/Django, MariaDB, Redis, VueJS, jQuery

**Pex**

**Software Developer**

April 2015 - April 2016 (1 year 1 month)

<http://www.pex.com/>

At Pexeso (now known as <https://pex.com/>), I was instrumental in designing and implementing the data scraping, processing, and management components of their Digital Rights Management platform. My work involved handling big data, processing over 1TB daily and managing billions of rows

in PostgreSQL, all optimized for real-time access and processing. I was part of a dedicated team of 10 developers, working collaboratively to ensure the system's efficiency and reliability.

Screenshots: <https://github.com/axdel/linkedin/tree/master/pexeso>

Tech stack: Debian, Nginx, Gunicorn, Python/Django/RESTframework, PostgreSQL, Redis, RabbitMQ, HBase, Hadoop, Phoenix, Kafka, ZooKeeper, Hive

### Lineapp (personal/weekend project)

Software Developer

January 2015 - December 2015 (1 year)

Bratislava, Slovakia

Lineapp was a universal event mobile application that dynamically adapted its design based on the user's GPS location, providing information on nearby events, concerts, and festivals, including event details, lineups, maps, and promoter information. Developed for both Android and iOS, it was deployed at approximately three local events on Android before being discontinued due to limited demand  $\_ \_ (\_ \_ ) \_ \_ /$ . This project was brought to life by a collaborative team of four developers.

Screenshots: <https://github.com/axdel/linkedin/tree/master/lineapp>

Tech stack: Debian, Nginx, Gunicorn, Python/Django/RESTframework, PostgreSQL, Redis, Apache Cordova, AngularJS, Ionic

### Reactor Inc.

Software Developer

December 2013 - April 2015 (1 year 5 months)

<https://www.reactor.am/>

Reactor functioned as an analytical and marketing tool that harnessed real-time user actions to initiate corresponding triggers, akin to the functionalities found in contemporary platforms like exponea.com and ifttt.com. My responsibility encompassed the design and execution of various system components, primarily focusing on the integration and upkeep of third-party data sources (plugins). These plugins facilitated a diverse array of action-trigger scenarios, ranging from weather forecasts and sports outcomes to stock market fluctuations and Shopify orders. I was part of a dedicated team of 10 developers.

## MagicMirror (personal/weekend project)

Software Developer + RaspeberyPi

January 2014 - December 2014 (1 year)

Bratislava, Slovakia

MagicMirror was a hybrid digital-analog project aimed at creating a smart, semi-transparent mirror with an LCD display positioned behind it. For a visual representation, photos and videos are available at the provided link. The project was discontinued due to the limitations of semi-transparency; while it may appear fully reflective and normal in photographs, the practical utility was not as effective as anticipated. This endeavor was a solo venture.

Screenshots / Video: <https://github.com/axdel/linkedin/tree/master/magicmirror>

Tech stack: RaspberryPi, some display from amazon, Raspbian, CSS/JS

## Synopsi Inc.

Software developer

December 2011 - December 2013 (2 years 1 month)

<http://www.synopsi.tv/>

Synopsi.tv was a personalized movie recommendation system leveraging machine learning. I was tasked with designing and implementing the data scraping, processing, and management components of the system. This included optimizing the database structure and ensuring robust, round-the-clock data scraping via TOR/VPN/Proxy to circumvent bans and maintain data integrity from services like IMDb, Netflix, Amazon Prime, TVRage, BlinkBox, Hulu, Vudu, Hitbliss, PirateBay, Letterboxd, CSFD, among others. Additionally, I developed a small side project named MovieMagnet, a Chrome extension that integrated torrent links from PirateBay into various movie websites. The development team consisted of 10 members.

Screenshots / MovieMagnet: <https://github.com/axdel/linkedin/tree/master/synopsitv>

Tech stack: Debian, Nginx, Unicorn, Python/Django, PostgreSQL, Redis, MongoDB

## Zoznam.sk

Software Developer

August 2008 - September 2011 (3 years 2 months)

At Zoznam.sk, the premier Slovak internet company, I was responsible for the design and implementation of a custom-built CMS framework for a variety of news e-magazines, including topky.sk, dromedar.sk, feminity.sk, autoviny.sk, and mojdom.sk. My role extended to developing various internal tools, a newsletter system, and reusable plugins for the CMS framework, such as those for weather and stock data. An interesting challenge I tackled was gaining access to the MS SQL database used by the door badge system, for which I developed a small web-management utility, informally named "shitter," to facilitate easy modifications of door-badge entries. This utility featured a user-friendly login with randomized images for a better user experience. I was part of a dynamic team of 15 developers.

Screenshots: <https://github.com/axdel/linkedin/tree/master/zoznam>

Tech stack: Apache, Perl, MySQL, MS SQL, Memcached

## Freelance

### Software Developer

2002 - August 2008 (6 years)

Bratislava, Slovakia

I designed and implemented custom-built CRM, CMS, and ERP applications utilizing Laravel and Symfony PHP frameworks. My expertise extended to customizing and developing plugins for open-source projects such as WordPress, Magento, and various e-commerce platforms, contributing to over 20 online stores. Additionally, I was responsible for creating frontend designs, embodying the role of a full-stack developer in today's terminology.

Tech stack: Apache, PHP, MySQL, Memcached, HTML/DHTML/JS/CSS, Corel Draw/Photopaint later Adobe Illustrator/Photoshop

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## Education

### Slovenská technická univerzita v Bratislave

Information Technology · (2002 - 2007)

### Masaryk University Brno

Physics · (2015)