Tomáš Janoušek

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https://lisk.in/ | liskin | pivnik

Skills

Languages	Bash, C#, C++, C, Elixir, Erlang, Haskell, JavaScript, Perl, Python, Rust, SQL, Scala, TeX
Technologies	Linux, PostgreSQL, HTML, CSS, WebExtensions, X11, x86 ASM, IRC
Tools	Vim, Git, GNU Make, GitHub Actions, Jenkins, QuickCheck, Docker, Ansible

Experience

Staff Software Engineer Moody's Analytics (London, UK) **2022–**
- Subject Matter Expert on Developer Experience (CI/CD, developer environments, git).
- Moved local dev env to GitHub Codespaces, enhancing collaboration and freeing local resources.
- Reduced dev env startup from over 1 hour to just 5 minutes, saving engineers 100+ hours monthly.
- Fixed docker-in-docker startup in the upstream devcontainers universal image.
- Pioneered good git practices across the company. Educated others about advanced git workflows.
- *Tech:* Rust, Python, C#, Docker, Kubernetes, CircleCI

sabbatical (Guildford, UK) **2020–2021**
- Joined the XMonad project as a core maintainer. Contributed fixes, features. Reviewed pull requests and helped 2 other people join the project. Directed a release. Launched crowdfunding.
- Implemented CI for taskwiki (taskwarrior integration for vimwiki) using Docker and GitHub Actions. Contributed a number of fixes and became a co-maintainer.
- Improved Language Server Protocol support (rename, code actions) in Async Lint Engine for Vim.
- Upped my Python skills, released strava-offline, strava-gear, arbtt-chart, foursquare-swarm-ical.

Software Engineer Altworx (Brno, CZ) **2019–2020**
- Collaborated on a real-time event processing system with physical and cyber security applications.
- Prototyped a 100× faster storage engine for the reality network (time-travelling graph database).
- Discovered, investigated and fixed several fundamental issues in the event processing pipeline.
- Addressed technical debt using static analysis tools (linting, types) and a custom testing framework.
- *Tech:* Elixir, PostgreSQL, Kafka, Docker, Jenkins, BitBucket Pipelines

Principal Software Engineer GoodData (Brno, CZ) **2017–2019**
- Ran continuous integration and deployment infrastructure and build tooling for 100 engineers.
- Reviewed and merged hundreds of pull requests across multiple repositories.
- Sped up our JIRA deployment so much that I got Thank-you emails from the grumpiest engineers.
- Contributed patches to jenkins-job-builder and python-jenkins. Became a co-maintainer of both.
- Made builds of dozens of components more reproducible, secure and scalable using Docker.
- Set up a merge queue for the legacy monolith with 4-hour integration tests, saving its developers hours of wasted time every week.
- Built a tool for tracking individual test failures in JIRA, helping developers of shared codebases.
- *Tech:* Python, Perl, Bash, Jenkins, Zuul, Groovy, Java, Docker, Puppet, RPM

Backend Software Engineer   SQLdep (Brno, CZ)   **2015–2016**
- Collaborated on a multi-dialect SQL parser and visual data flow (lineage) analyzer.
- Administered the CI infrastructure and introduced continuous deployment for the backend.
- Scaled the analyzer using parallel workers and a job queue. Set up logging and monitoring.
- Prototyped on-premise deployment of the cloud-first product for customers in regulated industries.
- Tackled tech debt: refactored the codebase into independent components, sped up tests and builds.
- *Tech:* Scala, Perl, SQL, Jenkins, Ansible

Technical Co-founder   Briskat (Brno, CZ)   **2014–2014**
- Developed a prototype of a high-performance interactive database primarily for Online Analytical Processing, capable of processing millions of rows in milliseconds on commodity hardware.
- Used caching and data compression (with some pre-/post-processing tricks to improve compression effectiveness) to reduce CPU work and improve memory bandwidth utilization.
- Designed data structures and algorithms for efficient data storage, sorting, joining and querying.
- *Tech:* Erlang, C, x86 ASM

Senior Software Engineer   GoodData (Brno, CZ)   **2011–2014**
- Developed a second-generation Extensible Analytics Engine (XAE), the core of GoodData platform.
- Built an optimizing compiler from Multi-Dimension Analytical Query Language to SQL.
- Tested the SQL backend against a reference implementation of the semantics using QuickCheck.
- Set up regression testing infrastructure using both synthetic and production data. This ensured correctness, prevented performance regressions and allowed us to run performance experiments.
- Pioneered CI (test results within a minute of git push) and CD (using Erlang hot code reloading).
- Had my sleep interrupted due to production incidents less than 5 times: XAE uses small workers (microservices) with almost no moving parts, serving millions of reports daily.
- Promoted to Senior Software Engineer after we fully migrated to the second generation XAE.
- *Tech:* Perl, Erlang, Haskell, PostgreSQL, Jenkins, Puppet, Splunk

Software Engineer   Red Hat (Brno, CZ)   **2006–2008**
- Maintained RHEL and Fedora packages for Bash, Dovecot, Cyrus IMAP, BRLTTY.
- Fixed Xorg freezing after 49.7 days (Windows 95, 98 famously had that issue a few years earlier).
- Added the boot-based timer into the Linux kernel to fix uptime and process start times after sleep.
- Fixed a hard to reproduce race in nss_ldap which led to users seeing another user's data (e-mails).
- Promoted from Associate Software Engineer to Software Engineer within 6 months.
- *Tech:* C, Bash, RPM, CVS, Git

Programmer   QNet CZ (Brno, CZ)   **2002–2006**
- Built an Internet Service Provider portal backend which configured iptables and traffic control (shaping) and showed live per-customer traffic statistics.
- Implemented a flexible role-based access control framework for the frontend.
- Shadowed the network administrator and technicians, later used the knowledge while volunteering for the CZFree.Net community network.
- *Tech:* C++, PHP, Perl, iptables, Asterisk, CVS, Subversion

Education

Computer Science Masaryk University (Brno, CZ) **2006–2013**
- Specialized in Parallel and Distributed Systems. Member of the ParaDiSe lab.
- Redesigned the e-learning software for typesetting exam test sheets: improved layout to avoid page/column breaks in multiple-choice; added support for advanced formatting, images and mathematical formulae. The system is still in use today. *Tech:* LaTeX, Haskell
- Typeset the Brisk Guide to Mathematics, a textbook for the undergraduate math curriculum.
- Teaching assistant for Introduction to Functional Programming; Automata and Grammars.

Scientific Computing Universität Wien (Vienna, AT) **2010**

Personal

Technical blog. Popular articles: <u>Side by side git-range-diff</u>; <u>Linux, media keys and multiple players</u>; <u>Even faster bash startup</u>

Free and open-source software. Contributed hundreds of patches, released dozens of small projects, joined several mid-sized projects as a (co-)maintainer.
- Maintainer of the XMonad X11 window manager. Ex-committer to the Fluxbox WM.
- Prototyped Linux support for external monitors on dual-GPU laptops (Nvidia Optimus).

Cycling. Won 3 alleycat races (and a few more podium finishes). Built several cycling-related tools:
- <u>strava-map-switcher</u> is a browser extension for Strava with over 4000 users adding better maps.
- <u>strava-offline</u> keeps a local mirror (backup) of Strava activities for further analysis.
- <u>strava-gear</u> is a rule-based tracker of gear and component wear.
- <u>locus-rflkt-addon</u> connects Locus Map (Android app) with Wahoo RLFKT (cycling computer).

<u>HTML version</u> | <u>PDF version</u>