

# Tomáš Janoušek

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

## Skills

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**Languages** Bash, C++, C, Elixir, Erlang, Haskell, JavaScript, Perl, Python, 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

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**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, arbt-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

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- 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

**Technical blog.** Popular articles: [Linux, media keys and multiple players](#); [Even faster bash startup](#)

**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-commmitter 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:

- [strava-map-switcher](#) is a browser extension for Strava with over 4000 users adding better maps.
- [strava-offline](#) keeps a local mirror (backup) of Strava activities for further analysis.
- [strava-gear](#) is a rule-based tracker of gear and component wear.
- [locus-rflkt-addon](#) connects Locus Map (Android app) with Wahoo RLFKT (cycling computer).