

Cover Letter

I am looking for Technical Lead or Senior Developer position in Python/FreeBSD/PostgreSQL related project.

I have more than 10 years of experience with all of these technologies used in production.

I use Python, especially Twisted Framework (event-loop based cooperative multitasking for Python <http://twistedmatrix.com>) for a lot of production services.

I have done user and kernel level programming with FreeBSD, including netgraph and geom stacks.

I use PostgreSQL for RDBMS tasks from its Postgres95 days. I have been involved in development of Pl/tcl language and Psycopg python DBAPI driver.

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About me

Most of my career I worked as Chief Technology Officer at IPNET company (<http://ipnet.ua>) - one of top 10 ISP's in Kiev, Ukraine. I was here for more than ten years - from a startup phase to the current state of stable production operations.

During these years, a lot of technology decisions were done - from choosing of network topology and equipment to developing of a full stack of software solutions.

Before IPNET, I was involved in the development of two other startups - company working in interactive voice response market and small dial up ISP. These companies were built from the ground up to the production phase too.

My preferred server platform is FreeBSD. I am involved with FreeBSD usage and development from 2.X days circa 1998.

As development desktop, I have used Gnome1/Gnome2 on FreeBSD, then switched to Gnome2 on Ubuntu Linux and finally to Mac OS X.

I have moved through several preferred programming languages - from Perl to TCL to Python. C language is occasionally used for low level tasks.

Twisted framework for python was used in many projects.

C API and Pyrex extensions were used for interacting between python and low-level code.

Now I am looking at Erlang/OTP system as the next step.

I prefer PostgreSQL database for RDBMS tasks. I have developed ORM system based on it. Python (for threading and Twisted environments) and PHP libraries for accessing it was developed and used in many of my projects. Some bug fixing and enhancements for PostgreSQL were done and accepted in the official tree.

Several FreeBSD kernel related projects were done by me and Ruslan Ermilov (one of FreeBSD

committers) and accepted in the official tree: ipfw tables, ng_vlan, geom_cache.

Some other netgraph modules were bug fixed during their use in production.

Also, we had done port of NetBSD to ADM5120 SoC.

I have been involved in the development of Psycopg database driver (DBAPI for PostgreSQL) including fixing some threading issues.

While working with IPNET, FreeBSD netgraph stack was used extensively for low-level network processing.

In the first generation of network topology, distributed system for packet switching was developed. This topology has PC routers in each building interconnected in sparse mesh. Processing of ARP, DHCP packets were done by the local node and traffic distribution were done by encapsulating original frames in unicast or multicast traffic between nodes.

In later stages, some twisted based servers were developed for control of hardware and FreeBSD-based BRAS servers and other network equipment: DHCP server, RADIUS server, Netflow collection service and services for managing shaper and firewall rules in realtime.

Email service in IPNET is based on Sendmail and Cyrus IMAP. For dynamic configuration of mailboxes, access lists and other parameters socket-map functionality of Sendmail was used with Twisted based backend service.

For SPAM and virus filtering, several solutions were used - DNS blacklists, AMAVIS antivirus, SpamAssassin and dspam spam filters.

For office mailboxes CRM114 based solution was used for self-learning and offline sorting of IMAP mailboxes to spam and any number of other folders. Self-learning is activated automatically based on user moving messages between folders. So user just does what it does in usual cases and system uses that for learning.

Also, network and services distributed monitoring system was developed for IPNET. Twisted based agents were installed on all servers. They run specific set of monitors for services on each host and generic cpu/memory/disk/network statistics collection. Collected data and detected problems got relayed to the central hub and distributed to monitoring stations of duty personnel. For network equipment traditional SNMP/ICMP polling was used and run by monitors on several hosts.

All software development and configuration management were done with support of Trac issue tracker and Subversion version control system. Development was done in Waterfall model with branches for independent features done by different developers.

Apart from technical tasks, I am also doing a development team management work, interacting with other departments to gather requirements and implement solutions, working with vendors to get problems resolved and do other management tasks.

In last years due to decline of ISP market in Kiev, IPNET moved from active development strategy to steady state with survival as the main goal, so I started to look for a new job and moved to a senior developer position in online services company. There I have refreshed my developer skills and technology stack. Tornado framework, MongoDB and Redis NoSQL databases were used in this project. Unit tests and test driven development used in software development process.

Also, I have some independent consulting and part-time development projects. I had projects with Domino Web Studio (now ITCG company) - <http://itcg.ua>. I am a member of technical boards of UA-IX (<http://ua-ix.net>) and Giganet (<http://giganet.ua>) Ukrainian internet exchanges.

Also, I do some hobby projects. Most of them are electronics related.

Some microcontroller based projects:

- electronic wall clock controlled by with RC5 IR remote
- temperature controller for aquarium with PWM control, PID loop and serial console for setup and monitoring
- attiny12V based timer with 2 years of battery life from single cr2032 battery

FPGA based projects:

- SPI cartridge emulator for WooWee Robopanda robot with tracing function * 3D printer motion controller
- Some of the projects have public repositories on github: <https://github.com/sevikkk>

I have participated in 2011 AI Challenge (<http://aichallenge.org/>) - Google sponsored contest in AI programming. To make things entertaining I did it in Go language, this was my first project with Go. I have not got to top 100, but 182 out of 8000 global rank is good enough for 2 week project as for me (many of top users started in beta stage - 2-3 months before finals). I got 6 out of 58 ranks for Go submissions, and 12 out of 210 Ukraine participants.

Profile page: <http://aichallenge.org/profile.php?user=10831>.

Work experience

April 2013 — to present **Senior Python Programmer**

Online services company (Employment details covered by NDA)

- Implementation of statistics and analytics system from design to production phases (PostgreSQL, MongoDB, python)
 - Development of backend features for web-based online services system (Python, Tornado, MongoDB, Redis)
 - Implementation of testing framework and initial test suite for critical legacy code (tornado.testing, nose, selenium webdriver)
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February 2000 — to present **Independent expert and developer**

ITCG Web and Advertising Agency (itcg.net.ua)

- Decision making in technology and software areas
 - Implementing core components of infrastructure (PHP, Python, Twisted, PostgreSQL, Memcache)
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April 2001 — March 2013 **CTO**

IPNET Internet Service Provider (www.ip.net.ua)

- Development and implementation of network architecture (Ethernet, TCP/IP, OSPF, MPLS, BGP)
 - Development and implementation of software architecture (TCL, PHP, Python, Twisted, PostgreSQL, Memcache)
 - Requirements gathering from internal customers
 - Building and management of development and operations teams
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March 2000 — March 2001 **CTO**

IMT Telecommunication Company (imt.com.ua)

- Design and implementation of hardware and software solution for IVR service (C, TCL, XOTCL)
 - Design and implementation of billing system (TCL, PostgreSQL, PHP)
 - Building of development and operations team
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January 1997 — February 2000 **System Administrator, Developer**

Concern Alex ISP department (alex-ua.com)

- Design and implementation of Radius AAA framework with realtime database lookups, multi-login detection (TCL, C, PostgreSQL)
 - Design and implementation of Billing system (TCL, PHP, PostgreSQL)
 - L2/L3 user support
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April 1995 — December 1996 **Software Developer**

State Property Fund of Ukraine (www.spfu.gov.ua)

- Development of Fox Pro data entry application (Fox Pro, SQL)
- Development of import scripts for Informix Database (Perl, SQL, SCO Unix)
- Support and administration of mail and data collection system (UUCP, Linux)
- User support