

Andrii V. Mishkovskyi

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Objective

To work on a product which solves real problems, preferably using reliable and suitable tools. I would love to work in environment where I can not only contribute, but also learn from the team and the products developed.

Education

Bachelor of Computer Science, National University of Ukraine "Kyiv Politechnical Institute"
2003 – 2007

Experience

Senior Software Engineer, CloudMade
Software Engineer, CloudMade

October 2009 – present
August 2008 – October 2009

CloudMade is GIS company that uses free ("free" as in "libre") data from OpenStreetMap project as the base for its services. I'm responsible for tile and vector servers development. Authorization servers are also being supported by me.

- Designed and implemented latest version of the tile server. Tile server itself supports [tile](#) and [staticmaps](#) services. Tile server uses smart queue messaging control to improve stability and enhance scalability. Cache management system described later also improves cache hit ratio and allows to update tiles seamlessly. Tile server uses Twisted for networking, queue control and infrastructure messaging and Mapnik for rendering. The previous version was an ad hoc mix of C, C++ and Python.
- Designed and implemented cache management system, which is responsible for updating tiles and staticmaps images in the background, thus minimizing serve time and overall load on services. The software is written in Python and uses RabbitMQ (with another backend supporting BDB) for the update queue and SimpleDB (interchangeable with PostgreSQL or BDB) for storing meta-information about each image re-rendered.
- Designed and implemented vector maps service. [Vectormaps](#) service is a very important part of navigation pack CloudMade provides and is used by many mobile applications. I'm the principal author of all APIs this service provides. The backend itself is a mix of Pylons and GeoAlchemy (SQLAlchemy for GIS databases).
- Developed Python API [library](#) from scratch, which is used by developers of Java and Ruby libraries as a model to follow. The API is basically a wrap over REST-like HTTP APIs CloudMade provides. The library features simple query builder.
- Open-source involvement – Mapnik (PostGIS plugin, SRTM plugin, Python bindings), occasional patches to CPython.

Software Engineer, Visonic Ltd.

July 2007 – August 2008

Visonic is an Israel-based manufacturer of security systems. I was responsible for supporting legacy desktop software and also got involved into development of several

web-based products.

- Support of 10-year old new MFC application that was used to program embedded devices. The application itself has been supporting different kinds of devices, oldest of which were almost 20 years old. In the core of the application sits sophisticated mainloop, which makes interaction with serial port programmable devices as flawless as it is possible.
As the application doesn't use threads, the callback style is used to program actual functionality behind the interface.
- Wrote lots of Python and XSLT scripts crunching XML files. Most of these scripts had curses interface + the usual optparse one. One of the hardest things about this was the need to support at least Python 2.2, because most of these scripts were to be run on old Red Hat installations.
- Created in-house wrapper of `libconfig` using SWIG for initial implementation and later rewriting it completely using only Python C API, to make the interface less cumbersome. The wrapping itself was never released to opensource, because of management direct objection.

Tech. Support Engineer, Telesystems of Ukraine February 2006 – July 2007

Worked as tech. support engineer for local ADSL internet service provider.

Part-time System Administrator, Strum August 2005 – February 2006

Worked as a part-time system administrator for small research institution.

Skills

Languages:	Python, C, Emacs Lisp
Libraries:	Mapnik, Twisted, werkzeug, GeoAlchemy, argparse, lxml, Boost.Python
Data persistence and messaging systems:	PostgreSQL, PostGIS, MongoDB, Amazon SimpleDB, Amazon SQS, Berkeley DB
Tools:	GNU Emacs, Subversion, Mercurial, git, coreutils, Jira, Confluence

Talks, Presentations and Code Sprints

- May 2009 – Mapnik Code Sprint at WhereCamp 2009 unconference
- July 2009 – Presentation of Vector Maps service at State of the Map 2009
- January 2010 – Talk about usage of Python at CloudMade at PyCamp Kyiv 2010
- July 2010 – Lightning talk on GIS-enabled databases at State of the Map 2010
- September 2010 – Mapnik Code Sprint #1 in London
- March 2011 – Tutorial “Building your own tile server using OpenStreetMap” at PyCon US 2011

Languages

- Russian, Ukrainian – native
- English – fluent (IELTS band score 8.0)