



Valentin Kuznetsov

✉ veknet@gmail.com,  <http://github.com/vkuznet>,  <http://linkd.in/Hnhko7>

PROFILE

Professional experience in software application and web development, systems administration, databases, shell scripting, programming and troubleshooting.

Strive to help people and resolve their problems. Strong belief in end-to-end product deployment, customer satisfaction and agile development methodologies.

Always looking for new challenges and committed to continuous education.

PROFESSIONAL EXPERIENCE

2003 - present

Data scientist and software engineer, Cornell University, NY

Work for **CMS :: LHC :: CERN**, Geneva, Switzerland. Co-lead a web development group (2008-2009), design and develop Data Discovery and Data Aggregation Systems, File Transfer toolkit and various components of Data Management System.

Work for **CLEO-c** collaboration at Cornell, NY, USA. Build EventStore data management system, low-level I/O framework for data access, meta-data web-service and port Cleo-c software among different UNIX platform.

1999 - 2003

Post. doctoral researcher and software engineer at UC Riverside.

Work at Fermi National Laboratory (**FNAL**) for **D-Zero** experiment. Co-lead software development group for **D0 global tracking project**. Built track reconstruction software framework and develop tracking algorithms based on Kalman filter.

1998 - 1999

Research Associate and software engineer at CERN, Geneva, Switzerland

Work for **NOMAD-STAR** collaboration. Design and implementation of NOMAD-STAR software, including track reconstruction, digitization, visualization and data management. Leader of software development group.

1993 - 1998

Junior Research Associate Joint Institute for Nuclear Research, Russia.

Research in theoretical physics, data analysis and matrix calculations.

TECHNICAL SKILLS

Buzzwords:

- » *Languages:* Python, C++, Erlang, R, Born shell, awk, sed; (*past experience:* C, Java, Fortan, JavaScript);
- » *Web technologies:* HTML, CSS, REST, AJAX, JSON, XML, Django, CherryPy;
- » *Databases:* SQLite, MySQL, ORACLE, MongoDB, CouchDB;
- » *Security:* SSH, Nmap, filtering firewalls (iptables), PAM authentication scheme;

- » *Version Control Systems*: GIT, SVN, CVS;
- » *Package management*: make/ant/scons, RPM, APT, ports;
- » *OS*: Linux, FreeBSD, Mac OS X; (*past experience*: SunOS, Solaris, OSF, IRIX);
- » *Process and Testing*: Agile, Prototyping, Mock-up, Unit tests, user feedback.

Tasks and procedures:

- » system and maintenance planning, installation and documentation;
- » software design and implementation;
- » kernel installation and tuning;
- » building, installing and remotely deploying software;
- » designing, configuring, and supporting web applications;
- » building web sites and their integration with databases;
- » planing and implementing system security;
- » shell programming;
- » backup planning and management;
- » mentoring students, project planning, group coordination;

EDUCATION AND TRAINING

Certificates

- » Power Searching with Google

2003-present, Computer Science department, Cornell Univ., Ithaca, NY, USA

- » Data-driven Web Applications
- » Computer Networks
- » SQL training
- » The Architecture of Large-Scale Information Systems

1999-2003, Training at Fermi National Laboratory, Batavia, IL, USA

- » Object-Oriented Design and Programming in C++;
- » Fast Track to Objects;
- » Object-Oriented Analysis and Design using UML

1999, Ph.D. in Physics (PDF), Joint Institute For Nuclear Research, Russia *

* Russian equivalent of Ph.D: Kandidat of Physical and Mathematical Sciences

ADMINISTRATION AND MANAGEMENT

Experience in leadership of small and medium size groups.

Skillful organizer with experience in long-term research projects. Experience of work as a member of large, small and international teams.

Familiar with handling of research grants and purchasing of equipment.

Day-by-day advice and leadership of students.

SELECTED PUBLICATIONS

Life in extra dimensions of database world or penetration of NoSQL in HEP community

V Kuznetsov et al., J. Phys.: Conf. Ser. 396 052043 2012, doi:10.1088/1742-6596/396/5/052043

Observation of a new boson at a mass of 125 GeV with the CMS experiment at the LHC

The CMS Collaboration, arXiv:1207.7235v1, CERN-PH-EP/2012-220, 2012/08/01

Data Aggregation System - a system for information retrieval on demand over relational and non-relational distributed data sources

G. Ball, V. Kuznetsov, D. Evans and S. Metson, doi:10.1088/1742-6596/331/4/042029

The CMS Data Aggregation System

V. Kuznetsov, D. Evans, S. Metson, doi:10.1016/j.procs.2010.04.172

The CMS DBS query language

By A. Afaq, V. Kuznetsov, L. Lueking, D. Riley, V. Sekhri, doi:10.1088/1742-6596/219/4/042043

Distributed Analysis in CMS

CMS collaboration, doi: 10.1007/s10723-010-9152-1

Provenance in High-Energy Physics Workflows

A. Dolgert, L. Gibbons, C.D. Jones, V. Kuznetsov, M. Riedewald, D. Riley, C. Sharp, P. Wittich
Computing in Science & Engineering, Vol 10, No. 3, p. 22, 2008

A multi-dimensional view on information retrieval of CMS data

A. Dolgert, L. Gibbons, V. Kuznetsov, C. Jones, D. Riley, J. Phys.: Conf. Ser. Volume 119, 072013, 2008

The CMS Dataset Bookkeeping Service

A. Afaq, et. al., J. Phys.: Conf. Ser. Volume 119, 072001, 2008

The New EventStore Data Management System For The CLEO-c Experiment

C.D. Jones, V. Kuznetsov, D. Riley, G.J. Sharp, Int. J. Mod. Phys. A20:3868-3870, 2005

PERSONAL

Languages: Russian (native), English, French (basic).

Self-motivating with good communication and interpersonal skills.

Fast learner in programming languages.

A full list publications is available upon request.

Employment is fully authorized.