Valentin Kuznetsov

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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

2014 - present
Advisory Board Member University of Washington, Data Science Program

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:
  » *Programming experience:* Python, C++, Erlang, Go, R, Born shell, awk, sed; (*past experience:* C, 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;

» *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**
» **Data Science**

2013, Certificate Data Science Program, Univ. of Washington, WA, USA
» Introduction to Data Science
» Methods for Data Analysis
» Deriving Knowledge from Data at Scale

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.

PRESS COURT

DAS and MongoDB
CERN CMS and MongoDB

SELECTED PUBLICATIONS

The CMS Data Management System
M. Giffels, Y. Guo, V. Kuznetsov, N. Magini and T. Wildish J. Phys.: Conf. Ser. 513 042052 doi:10.1088/1742-6596/513/4/042052

Keyword Search over Data Service Integration for Accurate Results
V. Zemleris, V. Kuznetsov and R. Gwadera, J. Phys.: Conf. Ser. 513 032106 doi:10.1088/1742-6596/513/3/032106

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. Volumne 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.