
IOAN VANCEA

Research Software Engineer, DevOps - Automation and Integration Specialist

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SOFT SKILLS

Good communication, excellent problem solving skills, attention to detail, proactive, leadership and mentoring, good time management, strategic thinker, flexibility, strong negotiator

TECHNICAL SKILLS

- **IT Certifications:** SUSE Certified Administrator in Enterprise Linux, SUSE Certified Engineer in Enterprise Linux, AWS Certified Cloud Practitioner
- **Scientific Computing:** developing mathematical and numerical models to solve real world problems. Having an extensive expertise in scientific software development, allows me to develop efficient and reliable numerical implementations. Experience on modelling and simulation techniques: Monte Carlo and Molecular Dynamics simulations: C, Python, Fortran 90/95, Perl, OpenMP, OpenMPI, SQL, Paraview, VTK, Matlab, MayaVi, Mathematica, GNU Scientific Library, LAPACK, BLAS, NAG, CHARMM, NAMD, Gromacs
- **Full Stack Web Development:** design and build clean RESTful web services, testing and debugging data and application integration. Developing complex and fast JavaScript-powered interactions that makes people to understand and care about the information: Python, Flask, PostgreSQL, MySQL, SQLite, MongoDB, Elasticsearch, Redis, HTML5, CSS3, JavaScript, jQuery, MeteorJS, Bootstrap, LESS
- **DevOps - Automation and Integration:** automation, testing, provisioning and configuration management. Experience covering all aspects of web-based and desktop applications including technical support, system administration, development, deployment, project management and interfacing with clients: VMware ESXi, KVM, Vagrant, Docker, Kubernetes, Ansible, Jenkins, GitLab CI, NGINX, Apache, HAProxy, Git, Nagios, Zabbix, Cacti, Graphite, ELK, TCP/IP and routing, DNS, LDAP

PROFESSIONAL EXPERIENCE

2016 - present: Software Engineer, Humboldt-Universität zu Berlin, Germany: The Nomad Laboratory - A European Centre of Excellence - <https://nomad-coe.eu/>

- responsible for the design and implementation of a state of the art RESTful API service for Materials Encyclopedia
- responsible of the implementation and maintenance of the NOMAD Encyclopedia infrastructure for continuum integration and automatic deployment process
- highly involved in architecting and implementing a reliable, scalable, secure, and highly performing infrastructure
- responsible with the monitoring the performance and reliability of our infrastructure and services (availability, databases, web servers, URL monitoring, HTTP status, ...)
- deployment of platforms and infrastructure using Ansible
- CentOS, SUSE systems and security administration, NGINX HTTP server administration in load-balanced configurations, PostgreSQL and MongoDB administration, optimization and advanced replication across regions
- providing technical expertise, Linux, automation, programming and infrastructure mentoring for team members

2015 - 2016: Web Developer - Independent Consultant

- worked on remote projects as an independent consultant, building full-stack web applications using: JavaScript, Meteor.js, MongoDB, Redis, jQuery, Bootstrap and JSON
- supported the clients in moving towards and building their Minimum Viable Product from scratch for early-stage startups
- laid out the app architecture and built initial functionalities
- MongoDB schemaless design, data migrations and advanced queries
- set up automated provisioning and deployment procedures on Amazon Web Services, DigitalOcean and Heroku

2012 - 2015: Research Software Developer, European Molecular Biology Laboratory, Hamburg

- leading role in technical implementation and scientific development of the ARP/wARP software suite and ArpNavigator molecular viewer
- development and implementation of algorithms and protocols, compilation, packaging and benchmarking of the software for end-users
- use of methods of pattern recognition, data mining techniques and algorithms, machine learning and modelling techniques for improving the automatic building of protein structures
- contributing to the development and maintenance of the software infrastructure at the EMBL beamlines.
- principal maintainer and developer for the web-based ARP/wARP, AutoRickShaw and ViCi computational services
- customer technical support for the software and web-based services
- monitoring and responding e-mail requests and ticketing system for technical support
- provided technical support relating to hardware and software, computer applications and network related issues to on-site and remote users
- installation, configuration, testing, maintenance and troubleshooting of workstations (Linux, Windows, OS X)
- application of software updates and patches
- managing server backups and restore procedures
- deploying of new hardware and virtual machines for software testing purpose
- provided support for installation, configuration and maintenance of 20 nodes computing cluster

2006 - 2014: Founder, Technical Manager, SC VanSolutions SRL

- web development, systems management, networking consulting services, remote and on-site support, computer network maintenance and networking monitoring services, wireless networking, computer networks installation, networks and servers support

2009 - 2012: Postdoctoral Scientist, Research Center Juelich

- development of solvent models for biomolecular simulations
- molecular dynamics simulations using CHARMM, VMD, Gromacs and MMTSB toolset
- protein structure prediction
- integration of the GMIN global optimization package with the latest version of CHARMM molecular dynamics package
- software installation, configuration and maintenance
- technical computing advices related to hardware and software
- monitoring of production environment, diagnosing and resolving hardware and software issues
- analysis, identification and resolution of difficult desktop issues for our users (hardware and software related)
- first point of contact for everything regarding IT and technical queries
- workstations backup and restore software installation, configuration and maintenance
- evaluation of new software and security risks
- web developer and maintainer of the group webpage and wiki collaboration platform

2007 - 2009: Linux/Unix System Administrator and Web Developer, Freelancer

- problem solving on Linux and Unix (FreeNet/OpenBSD) servers
- servers and services installation, their configuration and maintenance: TCP/IP, Apache/SSL, VPN, BIND, Samba, (VSI Pure)FTPd, DHCP, NFS, NIS, Postfix/Sendmail, IP firewalls
- implementation of different virtualization solutions: OpenVZ, Linux-VServer, Vmware
- 3rd Party software installation, configuration and maintenance: Content Management Systems (WordPress, Joomla, Drupal), Blog/Wiki Software (Docuwiki, PMWiki, MediaWiki), Online Photo Album Software (Pixelpost, Gallery, Coppermine)
- servers backup and restore
- installation, configuration and maintenance of different server monitoring software (Nagios, Zabbix, Zenoss, Cacti, Monit, Munin, RRDtool, Mrtg, AWStats, Webalizer)
- system integrity monitoring, system security, optimisation and hardening
- technical support: including better automation, firewall and VPN installation, backup and selection of the most secure software

1998 - 2001: Junior System Administrator, West University of Timisoara

- installation and basic configuration of FreeBSD and Linux based servers
- software installation and maintenance (updates and patches) for computer labs
- hardware installation and configuration: printers, computers, switches and routers
- writing documentation about installed software and their configuration
- cloning, backup and restore procedures for servers and workstations

EDUCATION

- 2007 - 2010 : *PhD*, Department of Mathematical Sciences, Loughborough University, United Kingdom
- 2005 -2008 : *Early Stage Researcher/Scientist (Marie Curie Fellowship)*, Max Planck Institute for Physics of Complex Systems, Dresden, Germany
- 2003 - 2005 : *Post University Studies in Informatics (MSc)*, West University of Timisoara, Department of Computer Science, Romania
- 2001 - 2003 : *Master (MSc) in Physics* - West University of Timisoara, Theoretical and Computational Physics, Romania
- 1997 - 2001 : *Physics Faculty*, West University of Timisoara, Romania

RESEARCH PROJECTS

- *PhD Project/Thesis*: Kinetic Monte Carlo Simulation for Nanoparticle Suspensions, Department of Mathematical Sciences, Loughborough University, UK
- *Research Project*: Pattern Formation in Thin Films of Nanoparticle Suspensions, Max Planck Institute for Physics of Complex Systems, Dresden, Germany
- *MSc Thesis in Informatics*: Parallel Numerical Methods for Solving Partial Differential Equations
- *MSc Thesis in Physics*: Using Computer Simulations in Physics. Visual Basic Applications
- *BSc Thesis*: Order and Chaos in Physical Systems

EXTRA ACTIVITIES

- Member of Romanian Cactus Team (Cactus is an Open Source PDE solving environment designed for scientists and engineers: www.cactuscode.org)
- Member of “The Services Team - Heroes” at OpenSUSE (www.opensuse.org) helping with all system administration related tasks and package reviews

REFERENCES

Available upon request