

Rares Cosma

DevOps / SRE

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Experience

Employment

2014–2016 **DevOps / Site Reliability Engineer**, *Sony Mobile*, Lund, Sweden.

Led the production platform and microservice development of an "elephant"-traffic website. Responsibilities included system architecture, orchestration and provisioning with a focus on site reliability, performance, fault tolerance, and component decoupling.

Detailed achievements:

- Designed and implemented an "*infrastructure as code*" platform on top of AWS CloudFormation and SaltStack, leading to full parity between lower environments and production, increasing transparency, control, and reducing the potential for human errors;
- Reduced the website time-to-first-byte by *an order of magnitude* by designing and implementing an async cache system, leading to a *80% reduction* of used AWS resources;
- Centralized logging and metrics gathering by deploying the ELK stack, leading to invaluable insights into application and platform level performance and improved alerts;
- Maintained and improved the continuous delivery pipeline and end-to-end test suites, leading to faster, safer deploys & more meaningful code reviews;
- Led the effort to increase the team's code quality by promoting the values of clean, decoupled, interface-based design, evangelizing the functional programming paradigm, and automating code analysis.
- Principal contributions to existing and new system components:
 - Designed & implemented an image resize service using Node.js;
 - Ported a template rendering service from Node.js to Scala, leading to hassle-free upstream merges of the UI layer;
 - Redesigned and refactored the product database component into a standalone API, leading to <60s delay on product announcements (down from 20+ minutes);
 - Designed and implemented a PHP framework for functional composition of models from multiple external APIs.

Technologies: Linux, AWS, SaltStack, Jenkins, ELK, Bash, Python, Scala, Node.js, PHP, HHVM, Redis, Docker, Vagrant, OpenVPN, VPC Peering, Cucumber

2012–2014 **Software Engineer**, *W3Edge*, Boston, MA, United States of America.

Developed the core of a complex WordPress theming framework and optimized the performance of high traffic client websites.

Notable achievements:

- Introduced an automated documentation process by implementing a custom PHP parser (in python), leading to less time spent updating the GitHub wiki;
- Implemented a Node.js acceptance test framework on top of Travis CI;
- Added a fragment-caching layer to our framework and used it to reduce the response time of an "elephant"-traffic website from 3000ms to <800ms;
- Introduced a declarative extension which allows attaching rich metadata to any WordPress entity, with focus on performance.

Technologies: PHP, Node.js, Python, Bash, Grunt, Sass, HAML, Coffeescript, WordPress

- 2011–2012 **Frontend Engineer**, *Upaya SRL / Addition Denmark*, Cluj-Napoca, Romania.
 Responsive, mobile-ready UI/UX coding for client websites. JavaScript ninja.
 Notable Achievements:
 - Remodeled the visual identity and behaviour for the website of an acquired high-profile corporate client;
 - Introduced and deployed *Less* as a styles preprocessor to promote code reuse.**Technologies:** JavaScript, jQuery, HTML5, Less, CSS3, Adobe Photoshop, XSLT
- 2006–2009 **Full Stack Web Developer**, *Forward Inc.*, Boston, MA, United States of America.
 PSD to fully functional website coding using a variety of CMS', chiefly WordPress, Drupal & Magento.
 Notable Achievements:
 - Quickly acquired skills for PSD to HTML/CSS coding, CMS templating and working with JavaScript frameworks;
 - Implemented a tiny PHP framework for easier WordPress integration.**Technologies:** PHP, WordPress, Drupal, Magento, JavaScript, jQuery, Mootools, CSS
- Freelance**
- 2005–Present **Linux System Administrator**.
 After my first encounter with Slackware in highschool, I fell in love with the free software world and never stopped learning about the Linux ecosystem. I currently maintain a VPS fleet across multiple cloud providers, using modern tools and automation to improve fault tolerance, availability and operational costs.
Technologies: Kubernetes, Docker, Jenkins, Shell scripting, Python, Virtualization
- 2008–2012 **Freelance Web Developer**, *Rares Ioan COSMA PFA*, Cluj-Napoca, Romania.
 Full stack web development services for a variety of international clients and web agencies.
 Assignments included:
 - WordPress theming and CMS integration;
 - Payment gateway integration;
 - Ecommerce systems based on WordPress & Magento**Technologies:** PHP, Python, WordPress, Magento, JavaScript, Node.js, jQuery, Paypal
- University Projects**
- 2005–2008 **Technical University of Cluj-Napoca**.
 - Multithreaded file transfer protocol & UI
 - Lempel-Ziv-Welch compression tool
 - DPSK Modulator with Nyquist filtering
 - IPv4 to IPv6 gateway for Asterisk PBX**Technologies:** Linux, Bash, Java, C++, C

Education

- 2008-2010 **MSc. of Telecommunications and Multimedia Technologies**, *Universitatea Tehnica din Cluj-Napoca, 10*.
- 2008 **Diploma Eng.**, *Universitat Politècnica de Catalunya - Department of Computer Architecture*, Barcelona, Spain.
 Erasmus Mobility for 3 months
- 2003–2008 **Diploma Eng., Telecommunications**, *Universitatea Tehnica din Cluj-Napoca, 10*.
 Specialization: Digital Networks
- 1999–2003 **Baccalaureate**, *"George Cosbuc" National College*, Cluj-Napoca, 9.35.
 Main Subjects: Mathematics, Physics, Information Technology

Independent coursework

2016.09 **Scalable Microservices with Kubernetes**, *Udacity*.

2016.08 **React.js Fundamentals**, *React.js Program*.

Independent coursework - Coursera

2013.10 **Algorithms: Design and Analysis, Part 2**, *Stanford University*, Grade: 91.5%.

2013.09 **Startup Engineering**, *Stanford University*, Grade: 83.8%.

2013.07 **Introduction to Systematic Program Design - Part 1**, *The University of British Columbia*, Grade: 98.3% with Distinction.

2013.05 **Functional Programming Principles in Scala**, *École Polytechnique Fédérale de Lausanne*, Grade: 83.3% with Distinction.

2012.11 **Introduction to Mathematical Thinking**, *Stanford University*, Grade: 88.5%.

2012.04 **Algorithms: Design and Analysis, Part 1**, *Stanford University*, Grade: 91.0%.

Awards & achievements

Publications

Title *Measurement-Based Analysis of the Performance of several Wireless Technologies*
Conference LANMAN 2008
Journal IEEE Xplore

National Olympiads

Years 1998-2001
Subject Chemistry
Awards Constanta 2001 - 3rd Prize; Galati 1999 - Mention, Brasov 1998 - 2nd Prize

Languages

Romanian native language
English full professional proficiency *ILR scale*
German limited working proficiency *"Deutsches Sprachdiplom der KMK" - May 2004*

Computer skills

Linux Distro	Apt: Debian, Ubuntu; Rpm: CentOS, RHEL	Virtualization	Kubernetes, Docker, LXC, Juju, OpenVZ, VMware, KVM
Provisioning	SaltStack, Chef, Puppet, Ansible	Orchestration	AWS, Azure, GCP
Monitoring	ELK, Prometheus, Grafana, InfluxDB, Ganglia, Monit	CI/CD	Jenkins, TravisCI, Concourse, PHPUnit, Cucumber, Chai
Programming Languages	Python, PHP, Scala, Node.js, Ruby, Go	Version Control	Git, Github, Gitlab, Mercurial, SVN
Service Configuration	<i>Databases:</i> MySQL, MongoDB, PostgreSQL, Oracle; <i>Webservers:</i> Apache, nginx; <i>Proxies:</i> HAProxy, Pound, ELB; <i>Message Queues:</i> Redis, ZeroMQ, Kafka, SQS		
Networking	TCP/IP stack, routing, OpenVPN, iptables, ufw, VPC Peering		
ELK Stack	Elasticsearch, Logstash, Kibana, Filebeat, Metricbeat, Packetbeat, Elastalert		