**Alexey Shulga**

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**Senior Software Engineer**

Results-oriented and visionary software engineer with expertise across the complete software development life cycle and experience in full-stack development. Lead research and architecture design for middle-ware modules and services; proven success managing complex development efforts from zero-level in unknown technical environments. Create robust, reusable design patterns and methods to minimize future development time and contribute to large-scale innovation and next-generation development. Fluent in Russian, professional level English, and beginner Korean.

Areas of Expertise:

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| * + Software Development Life Cycle   + Initial Research & Prototype Development   + Sophisticated, Reusable Designs   + Team Leadership & Mentoring | * + Software/Module Architecture Design   + OS Core, Iot, GUI, Cloud Server Layers   + Software Deployment/Implementation   + Open Source Development Space |

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| **Technical Proficiencies** |  |
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| Certifications: | Advanced Programming Level (C++) |
| Platforms: | Linux, Tizen, Windows 9x-10, Android |
| Languages: | C, C++, C#, JavaScript, Java, HTML, Python |
| Software: | Git, Gerrit, GitHub, vim, Tizen Studio, MS Visual Studio, Eclipse IDE, Jira, JUnit, glib, std, .NET, Xamarin, MFC, WinAPI, Tomcat, SoapUI, JMeter, AWS, SQL/NoSQL, StarUML, MS Office |
| Methodologies: | OOA/OOD, Design Patterns, Multithreading, Refractoring, Lean, Agile (SCRUM, Extreme Programming) |

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| **Professional Experience** |  |
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Samsung Electronics, Seoul, South Korea 11/2010 to Present

**Senior Software Engineer – Samsung Research Center**,3/2017 – Present

Provide technical leadership in coordinating design and development activities of a small SCRUM team of three researchers, two engineers, two on-demand developers, and two on-demand testers to create developer’s tools used to automate Tizen IoT device setup and App Development Life-Cycle management. Oversee and evaluate source code development, working with project stakeholders to plan projects, define architecture, and coordinate project release schedules. Maintain existing Tizen IoT Tools source code in online open source repositories. Implement programming best practices and coaching. Utilize Agile methodologies and Java and .NET app-development life-cycle processes to manage projects. Track and report project status to Lab Lead of Tizen Advanced Developer Experience Lab. Train customers to understand new tools.

**Key Achievements:**

* Credited for leading and coaching software development team to design and create tools used to add IoT capabilities to Tizen devices, while improving overall software development processes.
* Supervised creation of new processes and tools that automated deployment of Tizen IoT OS on Micro SD cards for IoT devices
* Created Reference Processes of Automated Tizen App Development Life Cycle, including Continuous Integration and Mobile Analytics, utilizing Tizen-to-Microsoft partnership.
* Port Microsoft’s SDK to Tizen, which allowed 3rd Party developers to automate SDLC of Tizen Xamarin Mobile and TV Apps (currently the SDK is in the Preview mode).
* Led team in taking ownership of product and software development process, championing new internal development processes that lead to creation of industry leading products.

**Senior Software Engineer,** 4/2014 – 3/2017

Promoted to Senior Software Engineer responsible for cutting-edge Tizen API development targeting third-party app and platform developers. Oversaw research and development of applications for Tizen 2.4/3.0/4.0 API with the goal of creating complex connected device network and service capabilities. Collaborated with Tizen Service Architect to transform Tizen devices into IoT Entity, sharing Tizen device features across Device-to-Device Network. Managed team of six engineers, serving as SCRUM team leader guiding onshore and offshore development teams through all SDLC phases. Held responsibility for project documentation, WBS, design and architecture overview, API reference, tutorials, and blog articles. Maintained existing Tizen API source code in online open source repositories. Trained new developers to meet client’s needs.

**Key Achievements:**

* Drove research to transform Tizen Devices into dynamic IoT Entities increasing platform capabilities and creating Device-to-Device Network and Services for Tizen 3.0 and later platform.
* Designed and prototyped add-ons to broaden OCF (OIC) specifications, while providing Internet of Thing (IoT) and Internet of Apps (IoA) solutions.
* Managed a research initiative with intent to extend existing OCF Specification, working with 3rd Party App & Platform Developers to make Tizen OS more "IoT-capable" on current and future platforms.
* Supervised and mentored team in creating four Tizen Platform Services for Device-to-Device Connect Framework and Web device convergence that supported App-to-App Communication, Remote App Control, Remote Device Sensor Sharing, Remote File Transfer
* Created Reference App and C# API for Tizen Smart Home App that demonstrated how to use Samsung IoT Services in Tizen.
* Led process to design Tizen-oriented solutions of Intelligent IoT Ecosystem, while researching ways to enable both Samsung and 3rd Party Cloud Services on Tizen Platform.
* Adept at product champion and evangelist, presenting new Tizen solutions and features at client conferences, trade shows and across mass media channels, including blogs and webcasts.
* Conducted all phases of research and development for native Maps Service API for Tizen 2.4 and later platforms, thus creating ease-of-use for entry-level developers.
* Direct offshore 20 member R&D team in researching / identifying existing prototypes and tailoring functions to fit current and future Tizen Platform Requirements.
* Spearheaded training and shared best practices to implement Test Driven Development (TDD), code reviews, unit testing, design patterns, OOD, and other standard methodologies resulting in improvements to software development quality and process.

**Senior Researcher,** 4/2012 – 3/2014

Conducted research and development of prototypes of cloud services and platforms for computer intelligence (similar to IBM Watson), context-aware computing, task continuity, social engineering, social curation, and data virtualization. Led research teams in the US and Finland developing data virtualization cloud service and transient social networking service.

**Key Achievements:**

* Developed RESTful Open API for NoSQL database of context-aware device activity rules, social, and device-to-device interaction.
* Designed knowledge search and natural language answer generation modules; enhanced answer selection combining user content analysis and machine learning boosting methods.
* Built app to react on user intent extracted from user’s speech using methods of Natural Language Processing; identified concepts to adopt in computer intelligence platform.
* Created web servers for cloud-based services; performed unit testing, stress testing, and performance estimation.
* Administered network of virtual services on AWS EC2, including deploying serves and databases.
* Thoroughly analyzed changing technical landscape and evolution of cloud & mobile solutions to develop next generation solutions.

**Research Engineer,** 11/2010 – 3/2012

Worked on cutting-edge authentication solutions, as well as family-oriented social networking services. Prepared and presented research summaries to management and team.

**Key Achievements:**

* Conceptualized and designed three methods and prototypes of graphical type-less, shoulder-surfing secure user authentication applicable to wide variety of devices with sufficient and limited input-output and computation equipment (smart phones, smart refrigerators, etc.).
* Proposed use cases for family-oriented social networking services with content access management features allowing for multiple roles.

Medicom MTD, Taganrog, Russia

**Lead Software Engineer/Junior Software Engineer,** 8/2002 – 10/2010

Developed software for biomedical diagnostic equipment for scientific research in electroencephalography, electrocardiography, electroneuromyography, as well as routine health care usage. Communicated with colleagues across functional areas. Computed estimation results of modules. Supervised and mentored junior team members.

**Key Achievements:**

* Developed core software modules of biomedical wired/wireless sensor piconet providing the foundation for majority of company products.
* Created compression method to encode ECGs and EEGs in real time with high level of accuracy and low computational complexity.
* Created various diagnostic processing modules and biomedical signals codec included in signal registration software and firmware.
* Played key role in implementing and mentoring junior developers on best practices such as automated bug tracking, OOP/OOD, and design patterns.
* Performed full stack development OS drivers to GUI to diagnostic algorithms and worked with all phases of the software development life cycle (SDLC).

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| **Education & Credentials** |  |
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**PhD in Computer Science and Cybernetics**

Southern Federal University, Rostov-na-Donu, Russia

*Dissertation: Development of a Method and Adaptive Algorithms of Bio-medical Signal Compression with Guaranteed Accuracy on the base of the Delta-transformation of Second Order*

**Master of Science in Computer and Information Science**

**Bachelor of Science in Computer Science**

Taganrog State University of Radio Engineering, Taganrog, Russia

***Publications:*** List available upon request

***Specialized Training:***

Algebra; Digital Control, Compression, and Information processing on a Basis Delta-transformations; Theory of Information Encoding; Methods of a Digital Signal Processing; Optimization Methods; Mathematic Logics and Algorithm Theory; Parallel Programming; Discrete Mathematics; Decision Theory

***Professional Development:***

Creative Software Design; Business Process Engineering and Management; Data Mining for Social Networks; Social-Aware Ubiquitous Computing; Analytical Methodologies for Big Data