

# TURKEY ALSALKINI

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## Personal Statement

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My interests fall in the intersections of high performance computing, parallel computing, cluster computing, compilers, static/dynamic analysis, operating systems, and computer architectures. Moreover, I have interests in the design of scalable, high-available systems, distributed data stores and virtualization.

I am a self-directed and self-managed software engineer and have a keen interest in technology, software engineering and programming languages. I have deep knowledge of advanced level programming in C/C++ including thread synchronization multithreading, multi-processing and concurrency. Right now, I am looking for a new challenging and rewarding position with a company where I can work on a variety of high profile projects and contribute my skills, knowledge and experience to develop my career.

## Technical Skills

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- *Languages:* C, C++, Java, JavaScript, PHP & Assembly.
- *Database Technologies:* PostgreSQL, MySQL, SQL Server. Net & Cassandra NoSQL.
- *Parallel & Multi-threaded Programming:* OpenMP, TBB, PThread & MPI.
- *Mobile Development:* PhoneGap/Cordova & Android.
- *Technologies:* Qt, boost, Java Spring, Hibernate, UML, RMI, JDBC, Servlets, JSP, Web Services, Protobuf, ZeroMQ, SOAP, RESTful, HTML, CSS, jQuery, BackboneJs, HandlebarsJs & XML/XSL.
- *Web Servers/App Servers:* Apache Tomcat & Microsoft IIS.
- *Data Communication and Networking:* HTTP, TCP/IP, SNMP, POP3, SMTP & DNS.
- *Operating Systems:* Linux/Unix/Ubuntu, MacOS & Windows.
- *IDEs:* QtCreator, Eclipse, Android Studio, NetBeans & MS Visual Studio.
- *Source Control Tools:* GIT & SVN.
- *Build Tool:* CMake, Maven & Gradle.
- *Testing and CI:* GTest, JUnit, Jasmine & Jenkins.
- *Others:* Docker

## Work Experience

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June 18 - present **SENIOR SOFTWARE ENGINEER @ ION CONCEPT SYSTEMS**

I have been working in an Agile team to design, develop, test and maintain desktop-based applications. This role also involves developing multi-threaded and distributed applications in a Linux operating system. Furthermore, this role requires knowledge with geospatial and mapping solutions. Technologies used in this role are: C/C++, Qt, boost, PostgreSQL and Git. Duties of this role involve gathering requirements to fully understand the problems, evaluate analysis to formulate solutions, implement resolutions with high standard and full documentation, perform manual and automated testing as well as code review. Furthermore, I am significantly contributing in designing the meteorological database, data formats and workflow required for modelling exploration surveys.

Regularly, I conduct static and dynamic analysis to improve the performance of the running operations.

**Oct 16 - May 18 SOFTWARE DEVELOPER @ PARAFORMANCE (THE UNIVERSITY OF ST ANDREWS)**

The main responsibility of this role is to build a static analysis tool using LLVM/Clang to detect concurrent safety problems in C++ applications. Building the tool requires a strong experience in C++ (C++11 and C++14), multi-core programming, OpenMP, TBB, PThread, GPU and MPI. This tool is integrated in Eclipse as a plugin where its development involves an advanced knowledge of Java and parallel refactoring. CMake, GTest, Git and Jenkins have been used for building and testing (Docker).

**Dec 15 - Sep 16 WEB DEVELOPER @ WR SMARTPHONE LTD**

I worked as a web developer to build an e-commerce website for an online store. This website has been built using the Magento framework. Technologies used to build this application were PHP, Javascript and jQuery.

**Oct 14 – Mar 15 INTERN @ SAMSUNG ELECTRONICS R&D UK**

I worked as an intern for 4 months at Samsung Electronics R&D Institute in Stains, London. This internship had two objectives: analysing memory usage of Android operating system and improving the performance of the Android framework on Samsung devices. First, I started with exploring the fundamental concepts of the memory management for the apps running on the Android Operating System. Then, an analysis and a profiling of some apps have been proposed. To improve the start-up of the Android apps, I designed and implemented some changes on the Android framework (Java) through parallelising some jobs running in the background. This internship gave me an experience with Android OS and Android SDK profiling/debugging tools as well as knowledge of the Android framework (Java and C++).

**Feb 14 – Sep 14 SYSTEM DEVELOPER (CONTRACT) @ BRACELET4SAFETY**

I worked for six months in a tracking system project which involves designing and developing a back-end and a front-end. The back-end was composed of a module that interacts with the GPS devices, an automated notification module, and a user management service deployed on Google Cloud Platform and Amazon Web Services. The front-end application was a cross-platform mobile app developed using PhoneGap framework for Android and iOS. Skills acquired for developing this system were: strong experience with multi-tiered web based application architecture (Java & MySQL); experience with HTML5, CSS, Javascript, jQuery & Handlebars Js; and knowledge of Cloud services, such as Google App Engine and Amazon Elastic Cloud Computing.

**May 13 – Aug 13 SOFTWARE DEVELOPER IN A RESEARCH PROJECT @ HERIOT-WATT UNIVERSITY**

I worked for six months in a natural language-based project at Heriot-Watt University. My role was to implement a distributed application for cognitive stimulation. Technologies used to build this application were: Java, RMI as a communication library, & XML; and libraries such as ffmpeg and VLC for streaming and recording videos as well as MaryTTS library as a multilingual Text-to-Speech Synthesis platform. Later, a paper titled with “*Natural language-based presentation of cognitive stimulation to people with dementia in assistive technology: a pilot study*” has been published.

## Personal Projects

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### 2005 – Present *Advertisement agency web application*

I have been working on a RESTful web application project using the Spring framework and Cassandra NoSQL as well as building an Android mobile app. This project widened my knowledge of the Apache Tomcat web server, virtualization principles, data centers and cloud infrastructures.

#### *Websites*

I have been developing a wide range of websites where many web technologies have been used. For the back-ends, PHP & MySQL were used while HTML5, CSS, Javascript, jQuery, BackboneJs, HandlebarsJs, Grunt & Yeoman were used for the front-end interfaces. Also, I built websites using WordPress and Magento content management systems.

#### *Warehouse Management Systems*

My first commercial projects were two warehouse management applications targeting sales companies. Technologies used to develop these projects were: C#.Net, VB.Net, and SQL Server.Net.

## EDUCATION

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2010 - 2016	<b>PHD IN COMPUTER SCIENCE AT HERIOT-WATT UNIVERSITY</b> Thesis Title: “A Self-Mobile Skeleton in the presence of external load” The research objective of my PhD was to develop a dynamic, adaptive, scalable framework that effectively utilizes shared distributed computing platforms. This requires designing a resource management algorithm with cost modelling using application/hardware-specific characteristics and environment measurements to improve the performance/throughput of the parallel, distributed applications. The technical gains of my PhD study are: <ul style="list-style-type: none"><li>• Solid experience of programming languages like C and C++.</li><li>• Deep understanding of operating system concepts, concurrency, parallelism and heterogeneous computing.</li><li>• Extensive experience in using High Performance Libraries like MPI, and multicore libraries such as POSIX and OpenMP.</li><li>• Working experience in Unix/Linux environments and the source control management Git.</li><li>• Knowledge of BigData, MapReduce, Hadoop and Apache Spark.</li></ul>	Edinburgh, UK
2006 - 2007	<b>TAUGHT MASTER IN SOFTWARE ENGINEERING AT ALEPPO UNIVERSITY</b> The research project which was a search engine with optimised search results implemented using C#/ASP.Net/SQL.Server and tested over some local websites. The general average was (79.51/100).	Aleppo, Syria
2001 - 2006	<b>BACHELORS IN SOFTWARE ENGINEERING AT ALBAATH UNIVERSITY</b> The research projects were: virtual learning system, navigation system in a city and speech recognition project for Arabic letters. The general average was (79.01 of 100).	Homs, Syria

## Publications

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- T. Alsalkini, G. Michaelson, “*Optimizing Data-Parallel Performance with a Cost Model in The Presence of External Load*”, IADIS’15, Oct, Greater Dublin, Ireland.
- T. Alsalkini, G. Michaelson, “*Generating Artificial Load Patterns on Multi-Processor Platforms*”, IADIS’14, Oct, Porto, Portugal.
- T. Alsalkini, G. Michaelson, “*Dynamic Farm Skeleton Task Allocation through Task Mobility*”, PDPTA’12, July, USA.

## References

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References are available on request.