Ali Khalili Araghi

CONTACT INFORMATION

607 - 9304 Salish Court
Burnaby, BC
V3J7C5 Canada

Voice: +1 (604)-710-0314
E-mail: aka52@sfu.ca
WWW: http://interaction-science.iat.sfu.ca/alikh

EDUCATIONS

Simon Fraser University, Vancouver, Canada **Sept 2011 – present**
School of Interactive Arts and Technology

Ph.D. in **Interactive Arts and Technology**

- Research Focus: "Virtual Emergency Operation Centres"

Simon Fraser University, Vancouver, Canada **Jan 2008 – Aug 2011**
School of Computing Science

Master of Science in **Computer Science**

- Research Focus: "Intelligent Decision Support for Cooperative Multi-agent Systems"

University of Tehran, Tehran, Iran **Sep 2002 – Sep 2007**
Department of Electrical and Computer Engineering

Bachelor in **Computer Engineering**

- Research Focus: "Case-based studies of transferring BPEL to REO"

WORK EXPERIENCES

Overinteractive Media Inc. **March 2012 – Dec 2012**
Software Engineer in Analytics Group – Full Time

I was the main software developer of the analytics group in the Overinteractive Media Inc. The OMI is a well known company in the realm of media and social networks. Working closely with clients such as CBC, the company has been producing a number of successful products which was mostly used by big clients in TV industry. I was involved in the design and development of an analytics product using big data architecture. This product gets information from different data sources (especially from social networks), analyzes big data by using technologies such as R, and visualizes the reports to cover descriptive and predictive analysis. Aligned with the technology used on other products at Overinteractive Media Inc., Zend MVC framework was used to build the architecture and core PHP classes for data gathering and visualization model. Data analysis is done using R and PHP scripts with SQL database calls. The final reports were visualized using Javascripts, JQuery, Highcharts.js and other web technologies. As the main software developer of the analytics group, I was working both as backend and frontend developer.

Vancouver Institute for Visual Analytics (VIVA) **Sep 2011 – present**

With close collaboration with industrial partners such as Boeing, students and professors working in the Visual Analytics area from SFU and UBC attended regular workshops to learn and teach the latest visualization techniques and get hands on different softwares used in industry such as Tableau, GeoTime, Spotfire and etc. I had the chance to be part of the VIVA community since September 2011 and was involved in the many events and workshops to acquire knowledge of Visual Analytics techniques.

Visual Analytics Lab, Simon Fraser University **Sep 2011– Aug 2012**
Research Assistant

Under supervision of Prof. Brian Fisher I was research assistant in Visual Analytics lab. With close collaboration with other lab members the main focus of my research was around Emergency Operation Centres and providing a virtual environment for decision makers to collect, analyze and

share information in disaster situations without physical presence at the sites.

Software Engineering Lab, Simon Fraser University **Jan 2008 – Aug 2011**
Research Assistant

I've been research assistant in Software Engineering Lab since I entered my , focusing more specifically on modeling complex systems using formal methods such as ASM. I have also been the administrator of the lab from Fall 2009 - Fall 2010.

Yekom Consulting Engineers Co. Ltd **Jul 2004 – Sep 2007**

I had a part-time job at Yekom Consulting Engineers. I worked in the company as a software engineer who helped them organize their finance database developed by MySQL technology. I also helped the development team implement the web-based information system of the company with use of *Struts* and *Ant* technologies.

Projects

Large-Scaled Multidimensional Web Application to Support Data Visualization, Mining & Analysis **Mar 2012 – Dec 2012**

During my work at Overinteractive Media Inc., I was involved in the Analytics group to design and implement a web application system that can be used for big data analysis and visualization. Using advanced analysis techniques with SQL and R programming, big data could be cleaned, analyzed and cached within proper framework. The integration of database and front-end customization were done using PHP with Zend framework architecture and by using different Javascript libraries, results were visualized in a customizable format which would meet the requirements expected from stakeholders.

Virtual Emergency Operation Centre **Sep 2011 – Apr 2012**

The motivation for this project comes from the city of Richmond emergency operation centre in order to overcome the problem of necessity of physical attendance of decision makers during any disaster and emergency situations. In this regard, under supervision of Prof. Brian Fisher in the Visual Analytics lab at Simon Fraser University I was involved in producing a model and architecture of a web-based system which is called "Virtual Emergency Operation Centre" to be used by Public Safety Canada for the development and distribution of such system among all the emergency operation centres nation-wide.

Net Enabled Adaptive Distributed Information Fusion (NADIF) **2008 – 2011**

We have proposed a highly adaptive architecture for a distributed information fusion system to address large volume surveillance challenges. Our focus was on network-enabled operations to efficiently manage employment of a set of mobile resources and their information fusion engines under dynamically changing environment.

Outcome: As the result, a high-level model of the proposed architecture is formally described in abstract functional and operational terms based on the Abstract State Machine formalism. The specifications of the model is implemented and the results of running different scenarios are evaluated for further improvements.

- **Design and maintenance of the project website (administrator)** – I have designed a wiki page for the project which includes all the information and publications related to this project. Moreover, it is designed in a way that every partner has an access to the page and is able to make any changes related to their contributions.

Design and Implementation of a multi player game **Summer 2005**

We implemented a game called "Worms Combat" with Java 2D using socket programming technology. The game had the ability to be played as human vs. human or human vs. computer.

Honors and Awards

First winner of Peter Borwein Private Scholarship in Mathematics & Computational Modelling of Complex Systems, Spring 2011

Faculty of Applied Science Graduate Fellowship at SFU, Spring 2010

Teaching Experiences

Developing Design Tools, Spring 2012
School of Interactive Arts and Technology, Simon Fraser University

Intro to Software Engineering, Spring 2012
School of Computing Science, Simon Fraser University

Web-based Information Systems, Summer and Fall 2011
School of Computing Science, Simon Fraser University

Introduction to Computer Programming, Fall 2009
School of Computing Science, Simon Fraser University

Publications

- U. Glässer, P. Jackson, A. Khalili Araghi, H. Wehn, H. Yaghoubi Shahir. "A Collaborative Decision Support Model for Marine Safety and Security Operations," In proceedings of *the BICC'10 - 3rd IFIP Conference on Biologically-Inspired Collaborative Computing*, Brisbane, Australia, September 2010.
- U. Glässer, P. Jackson, A. Khalili Araghi, H. Yaghoubi Shahir. "Intelligent Decision Support for Marine Safety and Security Operations," In proceedings of *International Conference on Intelligence and Security Informatics (ISI)*, (May 2010).
- Farahbod, R., Glässer, U., and Khalili, A., "A Multi-Layer Network Architecture for Dynamic Resource Configuration & Management of Multiple Mobile Resources in Maritime Surveillance," In Proceeding of *SPIE Defense & Security Symposium*, (March 2009).
- Farahbod, R., Glässer, U., Khalili, A., and Guitouni, A., "Dynamic Resource Management for Adaptive Distributed Information Fusion in Large Volume Surveillance–Phase Two," Tech. Rep. SFU-CMPTTR- 2009-5, Simon Fraser University (March 2009).

Computer Skills

- In depth web programming skills **PHP, HTML5, Javascript, JQuery**
- Practical experiences with scripting languages such as **SQL** and **R** and familiar with **SAS**
- Practical experiences with Data Analysis and Visualization using **Tableau**, **Geotime**, **Starlight**
- Practical experiences with MVC framework such as **Zend Framework**
- Programming skills in **C/C++, C#, Java, VB, Python**
- In depth practical experience with **ASM** Formalism and **CoreASM** Language