

Ethar Ibrahim Elsaka

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Education

PhD Student, Department of Computer Science, University of Maryland at College Park. *August 2010 - Present*

M.Sc in Computer Science. Department of Computer Science, Alexandria University, Egypt. *January 2007*

Master Thesis Title: "Towards Efficient Query Processing in Peer to Peer Systems"

Coursework GPA: 3.5

B.Sc in Computer Science. Department of Computer Science, Alexandria University, Egypt. *July 2002*

Cumulative grade: Very Good (77.8%)

Publications

Ethar Elsaka, Walaa Eldin Moustafa, and Bao Nguyen, and Atif Memon. Using Methods & Measures from Social Networking for GUI Testing. Submitted to the Second International Workshop on TESTING Techniques & Experimentation Benchmarks for Event-Driven Software (TESTBEDS 2010) to be held with International Conference for Software Testing, Paris, 2010.

José Luis Hernandez-Rebollar , *Ethar Ibrahim Elsaka*, José D. Alanís-Urquieta. AcceleSpell, a gestural interactive game to learn and practice finger spelling. Proceedings of the 10th International Conference on Multimodal Interfaces, October 20-22, 2008, Chania, Crete, Greece.

Ethar Ibrahim Elsaka. Towards Efficient Query Processing in Peer to Peer Systems. Master Thesis, Department of Computer Science, Alexandria University, Egypt, 2007.

Professional and Research Experience

University of Maryland at College Park, Department of Computer Science

July 2009 – Present

Volunteer Research Assistant

Automated Test Case Generation for GUI Applications (<http://guitar.sourceforge.net/>)

In this project, we model GUI possible event scenarios as a graph and we analyse this graph using social network techniques to find interesting test cases.

Key responsibilities and achievements in that project:

I was responsible of building a parser for the event graph files, creating a graph object corresponding to the GUI, and applying network measures such as betweenness centrality, and clustering to find appropriate test cases.

Programming languages and tools used:

Java, XML, JUNG graph analysis tool

Institute for Disabilities Research and Training

Silver Spring, Maryland, USA

September 2007 – Present

Senior Software Developer

AcceleGlove SDK Project (<http://www.acceleglove.com/productdetails.asp>)

AcceleGlove is the state of the art electronic glove that is equipped with accelerometers and is interfaced with computers using a USB port.

Key responsibilities and achievements in that project:

- I was the sole developer responsible of designing a Java SDK (library) for enabling Java developers of using the glove from their code.
- I was the sole developer responsible of writing the implementation of the SDK and documenting it properly.
- The glove is an asynchronous device in nature. I had to design an SDK with this property in mind, where as opposed to writing code for regular applications, in the SDK case there is no GUI to handle the glove asynchronous input. I had to abstract the way the developer would handle the asynchronous input in her code, and provide the methods and interfaces for such an abstractions (e.g. through listeners, event handlers, and multi-threading).
- I was responsible of designing and implementing a higher level of the SDK, where there are methods that allow developers to add samples of hand gestures to the glove, and then build predictive models for these gestures, and recognize similar ones later. I made this part of the SDK by integrating it with machine learning libraries.

Programming languages and tools used:

Java, H2 embedded database engine, Weka machine learning Java library, RXTX device interfacing library.

Senior Software Developer

AcceleSpell Project (<http://www.idrt.com/ProductInfo.php?ID=1028&u=02>)

AcceleSpell is a game software that is used for teaching the American Sign Language by making use of the AcceleGlove.

Key responsibilities and achievements in that project:

- I was the sole developer responsible of the design and implementation of AcceleSpell.
- I could achieve 99% recognition accuracy of the American Sign Language alphabet by picking up the most suitable machine learning algorithms and using them for training the glove.
- I was responsible of both the GUI and the engine.

Programming languages and tools used:

C++

Senior Software Developer

Other Programming Projects:

- Added AcceleGlove to games that did not use it before like SpellWell and Marvin Teaches Fingerspelling.
- Upgraded games using C++ like Clip and Create 4.
- Upgraded games using Macromedia Director like Clouds .
- Created games by writing C++ based scripts like Signo, Tomados de le ManoIII, Transcription, and Vision Adventure.

For more details about the nature of these software products, please refer to www.idrt.com

Senior Software Developer

Website Maintenance:

Used to maintain IDRT's web site, using Unix, PHP, and MySQL database.

QAVantage

Red Bank, NJ, USA

May 2008 – Present

Senior Software Developer

RTIME Project (http://qavantage.toolsforproductmanagement.com/index_files/MindManager.asp/)

Worked on the design and implementation of bi-directional integration between RTime and MindManager. This integration allows business analysts and software product managers to view and manipulate product requirements in a sophisticated visual diagram.

Key responsibilities and achievements in that project:

- I was the sole developer responsible of the design and implementation of that module.
- I was responsible of the GUI and the engine.
- I had to perform the integration by converting the RTime data format to the MindManager data format.

Programming languages used:

Visual Basic and C#. SQL Server

Ejada Business Solutions

Alexandria, Egypt

December 2002 – January 2007

Project Manager

The SAS Customer Segmentation Project

The aim of the project is building a complete customer segmentation solution for banking applications. using SAS software.

Key responsibilities and achievements in that project:

- I was responsible of a team of 3 developers, writing code with them, helping them with technical issues, and following with them before deadlines.

Programming languages and tools used:

SAS

Consultant (Dubai, UAE)

The National Bank of Dubai Project

The aim of this project is to customize Oracle Financial Services Applications ('OFSA') solution for the National Bank of Dubai operations.

Key responsibilities and achievements in that project:

- I was responsible of making on-site interviews in Dubai with bank officials to understand their bank database schema, to design the OWB mapping to OFSA.
- I participated in using OWB transformation of the bank's database to a format that can be fed to Oracle Financial Services Applications.

Programming languages and tools used:

SQL, PL-SQL, Oracle OLAP Cubes, Business Objects (BO) Reports, Oracle Financial Services Applications (OFSA), Oracle Warehouse Builder (OWB), and Oracle Analytical Workspace Manager.

Senior Developer

The National Commercial Bank Central Customer Repository Project

The CCR is an infrastructure that enables management and integration of customer information across bank legacy systems in one central database, because across different systems a single customer's information is usually inconsistent or inaccurate.

Key responsibilities and achievements in that project:

- I participated in the design and implementation of front-end C# forms to collect central information, and backend business logic to distribute them to legacy systems.
- I was responsible in a visualization module that plots relationships between customer based on being dependents of each others, or working at the same department, or having joint accounts. That involved working with graph drawing tools and integration them with the system.

Programming languages and tools used:

C#, SQL, Oracle, ODBC

Senior Developer

The Credit Scoring Project

Credit scoring is an intelligent analytical method for predicting how likely it is that a loan customer will pay back a loan before it is even issued.

Key responsibilities and achievements in that project:

- I had to apply machine learning algorithms to the input data to predict the likelihood of payback.
- I was the only developer responsible of the design and implementation of GUI front-end and business logic.
- I used excel VBA to visualize various statics by plotting them on charts.
- I participated in the design and implementation of front-end C# forms to collect central information, and I

Programming languages and tools used:

Java, JDeveloper, Excel VBA, Oracle DB, SQL

Project Manager

The Customer Segmentation Project

The aim of Customer segmentation project is to split customers into different groups or segments, within which customers with similar characteristics have similar needs.

Key responsibilities and achievements in that project:

- I had to apply K-Means clustering algorithm to the input data to predict customer groups.
- I participated in the design and implementation of GUI front-end and business logic.
- I used two methods of reporting, one is using Excel VBA, and the other using Crystal Reports.

Programming languages and tools used:

Java, JDeveloper, Excel VBA, Crystal Reports, Discoverer, Oracle Reports Builder, SQL, KMeans

Software Developer

The Operational Risk Project

The aim of Operational Risk Project is to measure the risk of direct or indirect loss resulting from inadequate or failed internal processes, people and systems or from external events.

Key responsibilities and achievements in that project:

- I worked on the conversion of the operational risk Package from a standalone windows application to a Web-based applications using JDeveloper, Business Component for java (BC4J) and Oracle Reports Builder
- I participated in the design and implementation of GUI front-end and business logic.

Programming languages and tools used:

Java, JDeveloper, BC4J, Oracle, SQL, Oracle Reports Builder

Software Developer

The Arab Bank OFSA Project

The project aim is to customize the Oracle Financial Services Application (OFSA) for the bank requirements, and to implement and extend the OFSA data model to cover the bank scope of business and requirements to implement Multi- dimensional profitability solution.

Key responsibilities and achievements in that project:

- I worked on the implementation of Oracle Warehouse Builder (OWB) mapping and OFSA Performance Analyzer (PA) module.

Programming languages and tools used:

PL-SQL, SQL, Oracle Warehouse Builder (OWB), OFSA Performance Analyzer (PA).

Teaching Experience

University of Maryland – Department of Computer Science
Teaching Assistant.

August 2010-present

Have been teaching Object Oriented Programming.

Alexandria University – Department of Computer Science
Teaching Assistant.

August 2002-January 2003

Have been teaching Introduction to Computer Programming.

Ejada Software Systems

Instructor

December 2002-August 2006

Have been teaching Object Oriented Programming in Java, Using Websphere MQ, Using Websphere Message Broker, ESQL Language, Building Intelligent Reports using Business Object, and Oracle Warehouse Builder.

Qualification Summary

Hard working, Persistent, Able to learn new technologies fast, Ready to fix unexpected problems, Able to work within a team and meet deadlines.

Technical Experience

Programming Languages

Proficient in: C, C#, Visual C++, Java, VB 6.0, VB.NET , SAS.

Development Tools

JDeveloper, Eclipse, Crystal Reports, Oracle Financial Services Applications (OFSA), Oracle Reports Builder, Oracle Forms Builder, Oracle Warehouse Builder (OWB), Business Object (BO), Discoverer, SAS Applications, Oracle Financial Workflow, Microsoft Visual Studio 6.0, Microsoft Visual Studio .Net, Websphere MQ, Websphere MQ Message Broker Toolkit, MQSeries.

Platforms

Windows, Unix (command line).

Database Management Systems

Proficient in: SQL

4 years Working Experience in: Oracle Developer, Oracle Designer, SQL Server, SQL Plus, MS Access, PL\SQL, MySQL, H2, ESQL.

Web development languages

4 years Working Experience in: HTML, XML, XPath, JSP

2 years Working Experience in: PHP

Open Source Software

PlanetSim: Structured Peer-to-Peer system simulator

Weka: Machine learning libray

H2: Embedded Java database engine.

Certifications

SAS Base Programming

SAS Advanced Programming
