
ALI J. BEN ALI

University at Buffalo

301B Davis Hall • Buffalo • NY • 14260

alijmabe@buffalo.edu

<https://blue.cse.buffalo.edu/people/alijmabe/>

EDUCATION

University at Buffalo (UB-SUNY)

Buffalo, NY, USA

Ph.D. Student, Department of Computer Science and Engineering

Fall 2014-present

The City College of New York (CCNY-CUNY)

New York, NY, USA

M.S. Computer Science

Spring 2011-Fall 2012

Kuwait University

Kuwait City, Kuwait

B.S. Computer Science

Fall 2000-Summer 2005

Minor in English Language and Literature

RESEARCH INTERESTS

- Systems
- Machine Learning

RESEARCH PROJECTS

Mobile Systems & Machine Learning

Summer 2015-present

Recognize personal device usage patterns using wearable device sensors.

Advisor: [Dr. Geoffrey Challen](#)

Mobile Systems & Compiler Design

Spring 2015

Structuring uncertainty using the `maybe` statement.

Advisor: [Dr. Geoffrey Challen](#)

Advanced Data Structures & Geographic Information System

Spring 2012

Implemented a system that provides an efficient orthogonal range query on polygon data. Given geographical data, the system will extract the polygon data out of it and pre-process it in such a way that makes it capable of supporting window query.

Advisor: [Dr. Peter Brass](#)

NOTABLE ACADEMIC PROJECTS

Mobile Systems

Fall 2015

Modified Android Open Source Project (AOSP) to provide notification queuing feature in the "Interruption Settings" of "Priority Mode". This feature will queue all received notifications when enabled and push them back to screen when disabled. It is also possible to customize this feature by limiting the number of notifications to queue and also by enabling this feature for specific apps only.

Distributed Systems

Fall 2014

Implemented several algorithms using TLA+ specification language and PlusCal algorithm language to model check their correctness properties.

Artificial Intelligence

Fall 2012

Implemented a software to evaluate the performance of several AI algorithms like Simulated Annealing, Genetic Algorithms, Tabu Search, and Hopfield Networks to solve the n-queens problem. The software was implemented using Java, JavaFX, and JavaFX Scene Builder.

Advanced Data Structures

Fall 2011

Implemented a text editor using C programming language that provides create text, text length, get, append, set, insert, and delete line operations in an efficient time of $O(\log n)$.

Advanced Data Structures

Fall 2011

Implemented a measure tree, which is a dynamic structure that keeps track of a set of n intervals, supporting insertion and deletion of intervals in time $O(\log n)$, and that answers queries for the measure of the union of the intervals in $O(1)$ time, using C programming language.

Advanced Data Structures

Fall 2011

Implemented a structure that uses height balanced search tree with two-level structure to maintain a linear order with $O(1)$ amortized time of insert and delete and $O(\log n)$ worst case time of compare using C programming language.

Advanced Data Structures

Fall 2011

Implemented a Bloom filter in C programming language for 2,000,000 strings with an error rate of around 2.5%, using only 2MB of memory. It will support a query of whether a string q is contained in the set or not.

Graph Algorithms

Spring 2011

Implemented a software that discovers a labyrinth of 1,000,000 vertices and finds shortest path between two points in an efficient time by using breadth first search (BFS) algorithm using C programming language.

Computational Geometry

Spring 2011

Implemented a software that takes set of line segments, checks if it is connected, then constructs a tree of minimal length touching all segments using worst-out greedy algorithm in C programming language.

Computational Geometry

Spring 2011

Implemented a software that takes a set of lines and finds the largest perimeter bounded convex k -gon described by these lines using C programming language. This is achieved by a dynamic-programming type algorithm combined with a line sweep over the intersection points of the lines.

Divide & Conquer

Spring 2011

Created set of functions that realize fast matrix arithmetic on recursively presented matrices using C programming language.

CPU Design

Spring 2011

Designed a processor which accepts four instructions move, move immediate, add, and subtract using VHDL programming language, Altera ModelSim and Quartus II software on Altera DE2 Board.

EXPERIENCE

Teaching Assistant	Fall 2015-present
University at Buffalo	Buffalo, NY, USA
Spring 2016 CSE 421/521 Introduction to Operating Systems: Dr. Geoffrey Challen https://www.ops-class.org/	
Fall 2015 CSE 486/586 Distributed Systems: Dr. Murat Demirbas	
Fall 2015 CSE 442 Software Engineering: Dr. Jesse Hartloff	
 Research Assistant	 Spring 2015-Summer 2015
University at Buffalo	Buffalo, NY, USA
Advisor: Dr. Geoffrey Challen	
Summer 2015 Recognize personal device usage patterns using wearable device sensors.	
Spring 2015 Structuring uncertainty using the maybe statement.	
 Senior Software Developer	 March 2013-July 2014
Public Authority of Agriculture	Kuwait City, Kuwait
Worked mainly on Oracle Database 11g Management System.	
 Software Developer	 November 2009-December 2010
Public Authority of Agriculture	Kuwait City, Kuwait
Worked mainly on Oracle Database 11g Management System.	
 Teaching Assistant	 Fall 2006
Public Authority for Applied Education and Training	Kuwait City, Kuwait
CS Computer Programming II (C++)	
 Software Developer	 May 2006-November 2009
Public Authority for Industry	Kuwait City, Kuwait
Worked mainly on Oracle Database 10g Management System and also as a Graphic Designer.	

RESEARCH GROUPS

Member of blue Systems Research Group	Winter 2015-present
University at Buffalo	Buffalo, NY, USA
Advisor: Dr. Geoffrey Challen https://blue.cse.buffalo.edu/	
 Member of Computational Geometry Research Group	 Spring 2011-Fall 2012
The City College of New York	New York, NY, USA
Advisor: Dr. Peter Brass	

SKILLS

Languages	C, C++, Java, Pascal, PlusCal, Python, SQL, TLA+, VHDL.
Platforms	Android Open Source Project (AOSP), JavaFX, Linux.
Suites	Adobe Creative Suite (CS), Waikato Environment for Knowledge Analysis (WEKA).
Tools	Git, \LaTeX , Vim.

EVENTS

- ACM HotMobile 2015*** February 12-13, 2015
The Sixteenth Workshop on Mobile Computing Systems and Applications
Presented "maybe We Should Enable More Uncertain Mobile App Programming" paper. Santa Fe, NM, USA
- 2012 Joint Mathematics Meetings*** January 02-03, 2012
Attended MAA Discrete and Computational Geometry Course. Boston, NY, USA
- 21st Fall Workshop on Computational Geometry*** November 04-05, 2011
Member of Organizing Team. Manhattan, NY, USA
- 2nd FINA Mens World Water Polo Development Trophy*** April 05-11, 2009
Member of Public Relations Team. Kuwait City, Kuwait
- 1st Olympic Council of Asia Sport Congress*** March 12-14, 2009
Member of Public Relations Team. Kuwait City, Kuwait
- Olympic Council of Asia Headquarters Inauguration Ceremony*** March 11, 2009
Member of Public Relations Team. Kuwait City, Kuwait
- Kuwait Industrial Exports Development Center Website Launching Ceremony*** January 15, 2007
Graphic Designer & Member of Organizing Team. Kuwait City, Kuwait

REFERENCES

- References available upon request.