Maryam Arab
Ph.D. student

Department of Computer Science
Volgenau School of Engineering
George Mason University

marab@gmu.edu
maryam.arab83@gmail.com
linkedin.com/in/maryam-arab
http://mason.gmu.edu/~marab

4400 University Drive, MS 4A5,
Fairfax, VA 22030

Research Area

I am investigating how human computer interaction would be effective in designing programming tool and how to blend machine and human intelligence.

I explored ways to describe programming skills more explicitly through programming strategies through a specific sequence of steps a developer can follow to successfully finish a programming task.

What I have done so far

I presented a novel notation for designing a programming language and a novel tool that explicitly represent programming strategies and frame executing strategies as a collaborative effort between human abilities to make decisions and computer abilities to structure process and persist information. I tested this tool with 28 users with 2 expert strategies. The evaluation showed potential benefits in terms of being more successful, organized, systematic, better performing in finishing the assigned development task.

Next, I evaluated how we can help expert developers share their expertise by writing down their strategies and what difficulties they faced.

Extracting and keeping expert strategies brings up the hope of the possibility of extracting the accumulated strategic knowledge and rules of experts and then using this knowledge to train future experts. It might bring up a whole set of explicit programming strategies that can be used in schools or on personal training and will reduce the decade of experience and training required for people to become elite programmers.

Research Interests

Software tools design and development
Human-computer interaction
Datamining

Employment

George Mason University	Jun 2017 -Present
Research Assistant	
Department of Computer Science	
	January 2017-May 2017
George Mason University	
Teacher Assistant	
Department of Computer Science	
	May 2016 – August 2016
Nexus Direct	
Intern	
Design and development of WordPress website	
Develop theme and custom fields for the website	
Old Dominion University	January 2014 – August 2016
Graduate Research Assistant	
Department of Computer Science	
Agah Information Co.	April 2013 – Jun 2014

Software Engineer
> Design and development of "I Shop" (Java, Grails, Groovy)
> Graphic and UI Designer (HTML, jQuery)
> Website design and development (WordPress, PHP)

Aryans Arzeshpardaz Investment Consulting Co.(AAICCO)   October 2011 – April 2013
Software Developer, Network Admin
> Designed and implemented holding software system (C#)
> Developed company's evaluation system (C#)
> Developed portfolio management system (Java, Grails, Groovy)
> Automated Test (Asp .Net)
> Network Maintenance

Shayen Informatics Co.   October 2007 – November 2011
Software Developer
> Designed and developed "Sharif University of Technology" Card printer system (C#)

Education

Ph.D. in Computer Science   January 2017- Present
> *George Mason University*
> *Advisor: Thomas Latoza*

Master in Computer Science   August 2014 - August 2016
> *Old Dominion University*
> *Thesis:* Detecting On-street parking spaces using pedestrian cellphone Magnetometer internal sensor
> Propose a sensor based Mobile application for detecting the curb side parking spot
> Design a Mobile application to detect the street lane number in which the car is driven
> *Advised by Tamer Nadeem*

B.S. in Electrical and Computer Engineering   August 2002-February 2007
> *Department of Engineering*
> *Tehran Markaz University*

Technical Skills

Platforms	Ubuntu Linux, Windows, Mac
Programming Skills	Java, Android, C#, C++, ASP.net, PHP, Groovy
Web Development	HTML, CSS, JavaScript, XML, Grails, JQuery, JSON, Spring Framework, Hibernate, Spring MVC
Software Development Methodologies	Agile, OOAD, UML
Software Development Tools	IntelliJ Idea, Eclipse, MS Visual Studio .Net, Android Studio, Team Foundation Server, SharePoint Server, CVS, SVN, JUnit, Git
Database Management Systems	MySQL, MS SQL Server, Firebase

Publications

[C3]   *Thomas D. LaToza, Maryam Arab, Dastyni Loksa, and Andrew J. Ko – Explicit Programming Strategies- ESE-2019(under revision)*

[C2] Maryam Arab, Tamer Nadeem. MagnoPark - *Locating On-Street Parking Spaces Using Magnetometer-Based Pedestrians' Smartphones.* SECON 2017: 1-9

[C1]   Jing He, Dong Si, Maryam Arab. *Detection of Secondary Structures from 3D Protein Images of Medium Resolutions and its Challenges.* ICIG (2) 2015: 147-155