

Islam Akef Ebeid

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I am a PhD Student at the Department of Computer and Information Science at the University of Arkansas at Little Rock. I research innovative ways of visualizing information especially with the evolution of virtual and augmented reality technologies. I also experiment with techniques of data interaction using commodity depth cameras and sensor technology. I focus on research topics that lie in the intersection between human computer interaction, information visualization and computer vision across different media and mixed reality platforms. Shaped by a systematic education in Mathematics, Systems Engineering and Computer & Information Science combined with several years of industry experience in data modelling, database and user interfaces, my goal is to create systems in which information are handed to pipelines of modelling, transformation, rendering, and interaction producing a visually pleasing and interpreted interactive data visualization experiences.

Education

- **PhD**, Computer and Information Science 2015 / 2021
Department of Information Science, University of Arkansas at Little Rock, Little Rock, AR
Advised by Prof. Carolina Cruz Neira & Prof. Dirk Reiners
GPA: 3.62/4.0
Related Courses: Data Quality, Virtual Reality, Computer Graphics, Information Visualization, Database Design
- **MSc**, Information Science 2011 / 2013
Department of Computer and Information Science, Arkansas Tech University, Russellville, AR
Advised by Prof. Larry Morell & Prof. Roger Fang
GPA: 3.92/4.0
Related Courses: Decision Support Systems, Database Design, Web Development, Data Warehousing, Web User Interface Design
- **BSc**, Computer and Systems Engineering 2003 / 2008
Department of Electrical Engineering, Ain Shams University, Cairo, Egypt
Graduation Project: Distinction

Certifications

- ITIL Foundation in IT Service Management Certification - EXIN 2013
- Fundamentals of Engineering (FE) - NCEES 2010

Honors

- Honorable mention for the contribution in Dr. Mihir Jaiswal PhD dissertation titled "Analysis of protein-protein interactions using chemical cross-linking mass spectrometry (CXMS): Novel computational approaches" 2015
- Distinctive Senior Design Graduation Project - Ain Shams University 2008
- Top 30 class in 3 years high school out of 1500 students 2000 / 2003

Posters

- MCBIOS 2015 Poster "XLPM Map Viewer: A protein-protein interaction map viewer"
- MCBIOS 2016 Poster "VisInt-X: Visualizing protein-protein interactions"
- University of Arkansas at Little Rock Research Expo 2015 Poster "XLPM Map Viewer: A protein-protein interaction map viewer"

Service & Participation

- ACM Super Computing 2016, represented University of Arkansas at Little Rock as part of the great planes network booth Salt Lake, Utah 2016
- Journal of Imaging Science and Technologies, Peer reviewer 2016
- Nvidia GDC Conference 2016, Accepted as a volunteer San Francisco, California 2016
- Electronic Imaging 2016 – SPIE San Francisco, California 2016
- ICAT-EVGE 2016 Virtual Reality Conference, volunteer Little Rock, Arkansas 2016
- An honorable mention for overall Egypt delegation at the Arkansas Tech University Collegiate Model UN conference Russellville, Arkansas 2011

Publications

- Ebeid, Islam Akef and Cruz-Neira, Carolina and Jaiswal, Mihir and Zybaylov, Boris. "Protein Chemical Cross-linking/Mass Spectrometry: From raw data to fully immersive visualizations." San Francisco: Electronic Imaging, 2016. 1-7

Book Chapters

- Invited to participate in a call for chapters in a book titled "Big Data Storage and Visualization Techniques" / Still in progress - Publisher: IGI Global

Selected Professional Experience

Research Intern

Intel Corporation – Visual and Parallel Computing Group

Santa Clara, California

April 2016 / September 2016

- Implemented a Visual Simultaneous Localization and Mapping algorithm in an Intel proprietary GPU programming library based on Intel RealSense Technology.
- Applied the implemented algorithm to a Virtual Reality application exploring the potential applications of Intel's GPUs in this field.
- Researched the possibility of creating user interfaces in a mapped augmented reality environment
- Advised by Dr. Yuting Yang

Software Engineer

Information Network of Arkansas (NIC Inc.)

Little Rock, Arkansas

May 2013 / August 2014

- Provided production support for Arkansas.gov state portal's visual interface backend information system
- Fixed major issues in the Arkansas State Police portal which led to the enhancement of the accident reports process
- Participated in ITIL certification exams which helped increasing and service level of agreement index of the company
- Provided development support for test versions of new e-government services backed by the development team
- Contributed to the migration to Sales Force customer management system

Software Engineer

Contractor Based

Mediterranean / North African Region

January 2009 / August 2011

- Designed and developed a big data visual solution for applying promotions to customer accounts in the telecommunication business model. The application was successfully installed at **Maroc Telecom** and **Tunisie Telecom**
- Contributed to the migration of new database systems at **Tunisie Telecom** through redeveloping user interfaces and securing the connection to the database
- Developed with a team a set of big data batch jobs utilities for telecommunications businesses at **Orange Telecom**
- Collaborated with the integration team at **Orange Telecom** to install and enhance the integration between billing and all other systems using WebMethods Data Integration platform
- Contributed to the development of the migration procedures of revenue assurance systems for telecommunications at **WeDo Technologies**

Teaching / Graduate / Research Assistantship Appointments

Graduate Assistant

Arkansas Tech University
Department of Computer and Information Science – Prof. Roger Fang

Fall 2011 / Spring 2012

Graduate Assistant

Arkansas Tech University
International student services office – Mr. Yasushi Onodera

Summer 2012

Teaching Assistant

Arkansas Tech University
Introduction to computer programming – Prof. Matt Brown

Fall 2012

Teaching Assistant

Arkansas Tech University
Computer Networks I – Prof. Jerry Wood

Spring 2013

Research Assistant

University of Arkansas at Little Rock
Department of Information Science - Emerging Analytics Center – Prof. Carolina Cruz Neira

Fall 2014 / Spring 2015 / Summer 2015 / Fall 2015

Teaching Assistant

University of Arkansas at Little Rock
Information Visualization – Prof. Dirk Reiners

Spring 2016

Teaching Assistant

University of Arkansas at Little Rock
Programming in Python – Prof. Dirk Reiners

Fall 2016

Technical Tools

Programming Languages	C/C++ Java JavaScript PHP Python
Database	SQL PLSQL TSQL Oracle MySQL Microsoft Business Intelligence Suite
Graphics	OpenGL WebGL D3 VRJuggler OpenVR Unity
Parallel Programming	OpenCL CUDA
Computer Vision	OpenCV Intel RealSenseSDK Microsoft Kinect SDK
Operating Systems	POSIX Windows
Servers	Tomcat Websphere
Web	XML HTML JQuery SOAP REST
IDE	Netbeans Visual Studio Eclipse
Bioinformatics	VMD GLMoI PDB
Simulation	Matlab R

Selected Research Projects

VisInt-X: Visualizing interactions in Cross Linked proteins

Purpose: Collaboration with the Department of Bioinformatics at UAMS

A WebGL/D3 based interactive visualization of real time big data generated by XLPM; a machine learning algorithm for analyzing proteins interactions

3D reconstruction for augmented reality information systems

Purpose: Intel research internship project

Implementation of a Visual Simultaneous Localization and Mapping algorithm in an Intel proprietary GPU programming library based on Intel RealSense Technology for augmented reality based information systems.

Evaluating multiple Latent Dirichlet Allocation topic modelling software packages

Purpose: Class project for Machine Learning

A study to compare the results of two packages (Mallet and Gensim) to Topic Model the 20 Newsgroup dataset

Global Big Data Management & Governance in Health Care Information Systems

Purpose: Class project for Data Governance

A study of Data Governance in Healthcare information systems. This paper examines the different topics that should be talked about when discussing the management and governance of Big Data in hospitals especially with anticipated changes and developments in technologies and the amount of data stored in the future

XLPMOL: An OpenGL Visualization of 2 Protein Models simultaneously based on PDB files

Purpose: Class project for Computer Graphics

An OpenGL Visualization of 2 Protein Models at the same time based on Protein Data Bank Data files

Visualization of NYC Open data tree locations

Purpose: Lab project and demo

A simple D3 visualization of tree locations on google maps

Visual programming and algorithm animation for genesis programming language

Purpose: Masters Project

The main goal of this system is to provide a graphical representation of these changes in two ways: displaying the behavior, of an existing algorithm and moving graphical objects around the screen to simulate an algorithm and the system automatically generates the code

Intersection Collision Avoidance System

Purpose: Bachelor's Graduation Project

Intersection Collision Avoidance System (ICAS) is an applications development for a series of technologies directly linking road vehicles to their physical surroundings to improve road safety. A Java based server client application + hardware implementation (GPS-Microcontrollers), based upon that vehicles can be connected to servers on the streets to be able to control traffic

Personal Interests

- Space exploration enthusiast
- Photography on an amateur scale
- Home crafts
- Philosophy