# ABDOULMENIM BILH

Abilh@uwaterloo.ca +218 91 385 2181

## SUMMARY OF QUALIFICATIONS

- Highly analytical skills developed over years of conducting research work ended up by acquiring Ph.D. degree in computer engineering from University of Waterloo, Canada, in December 2017.
- Excellent skills in computer programing languages; including Python, JAVA, C/C++, Fortran, Assembly, Matlab.
- Long time experience with designing, developing, and coding algorithms.
    - **Ph.D. research work**: Designing and implementing smart charging algorithm for electric vehicles in smart grid using Java language.
    - **B.Sc. graduation Project:** Enhancing data encryption standard (DES) algorithm. Successfully implemented the new version of the algorithm using C language.
- Excellent ability to fast adapt and learn new engineering subjects; demonstrated by working in smart grid area as part of my Ph.D. program.
- Strong planning and organizing capabilities, team leader capable of developing a clear vision and strategy.

## WORK EXPERIENCE

**Ph.D. Researcher** **Sep 2012 – Dec 2017**
**Department of Electrical and Computer Engineering, University of Waterloo** **Ontario, Canada**

- Worked on proposing, designing, and developing "A Novel Real Time Charging Approach for Electric Vehicles (EVs) in Smart Grids".
- A model capturing the stochastic behaviour of the net-load in the electric grid has been developed and published in *VTC2015-spring conference in Glasgow in 2015.*
- A real time algorithm for charging EVs has been simulated using JAVA tool developed from scratch for testing. The work has been published in *IEEE transaction on smart grid journal in 2016.*
- Complete communication structure between a server and distributed smart chargers has been proposed. An analytical model has been developed to estimate the average communication delay between the server and the smart chargers. The results published in *IEEE transaction on industrial informatics journal in 2017***.**
- The well-known Network Simulator 2 (NS2) has been used to validate the communication model.

**Master Researcher** **2008 – 2010**
**School of Computer Science and Engineering, University of New South Wales** **Sydney, Australia**

- Worked on developing a novel multicast routing protocol for wireless mesh networks. The work has been published in *37th Annual IEEE Conference on Local Computer Networks, Clearwater, FL, USA, 2012.*
- During my work I have an experience with different programming languages (Java, and C++). Also, I worked on QualNet-4.5 network simulator.

**Computer Engineer** **2001– 2006**
**GPTC (General Post and Telecommunication Company)** **Tripoli, Libya**

- Worked as a member of special advisory committee assigned by the chairman of the company.
- The main duty of the committee is to restructure the whole telecommunication sector in Libya.
- Coordinated with the various engineering disciplines/departments in the company.
- Involved in top meetings and negotiations with bidding companies (Siemens, Alcatel) to win huge communication infrastructure project.
- Worked as a team member in GIS Maps project.

**B.Sc., Graduation project** **1999-1998**
**Department of Computer Engineering, AL-Fateh University** **Tripoli, Libya**

- Worked on developing a new version of Data Encryption Standard (DES) algorithm with stronger encryption key.
- The new version of the algorithm has been implemented using C language for both sides, encryption and decryption side.
- The new algorithm is successfully tested to encrypt and decrypt any type of computer files such as text, audio, video.

## ACADEMIC EDUCATION

- **Ph.D. Degree** **Sep 2012 – Dec 2017**
  **Department of Electrical and Computer Engineering, University of Waterloo Ontario, Canada**
  - Subject: *A Novel Real Time Charging algorithm for Electric Vehicles (EVs) in Smart Grids*

- **Master by research** **Aug 2008 – Aug 2010**
  **School of Computer Science and Engineering, University of New South Wales Sydney, Australia**
  - Subject: *The Design and Evaluation of an Opportunistic Multicast Routing Protocol*

- **Master by coursework** **Aug 2007 – Aug 2008**
  **School of Computer Science and Engineering, University of New South Wales Sydney, Australia**
  - Specialization: *Internetworking*

- **B.Sc., *Bachelor of Science* (Engineering)** **1994 – 1999**
  **Department of Computer Engineering, AL-Fateh University Tripoli, Libya**
  - Major: *Computer engineering*

## ACADEMIC AWARDS

- **The sensory Networks Algorithms & Programming Technology Prize for the best performance in Analysis of Algorithms course from School of Computer Science and Engineering (CSE)-University of new south wales UNSW, 2007.**

- **Best postgraduate performance award (eighth place in the school) from School of Computer Science and Engineering (CSE)-University of new south wales UNSW, 2009.**

- **University of Waterloo (UW) Graduate scholarship award for the best performance in nonlinear optimization subject, 2013.**

## PUBLICATION PAPERS

- A. Bilh, K. Naik and R. El-Shatshat, "Evaluating Electric Vehicles' Response Time to Regulation Signals in Smart Grids," in *IEEE Transactions on Industrial Informatics,* 2017.

- A. Bilh, K. Naik and R. El-shatshat, "A Novel Online Charging Algorithm for Electric Vehicles Under Stochastic Net-Load," in *IEEE Transactions on Smart Grid,* 2016.

- T. Khalifa, A. Bilh, and et al "Modelling and performance analysis of TCP variants for data collection in smart power grids." *Computer Communications* 103, 2017.

- A. Bilh, K. Naik and R. El-Shatshat, "An Adaptive Charging Algorithm for Electric Vehicles in Smart Grids," *IEEE 81st Vehicular Technology Conference (VTC Spring)*, Glasgow, 2015.

- A. Bilh and C. T. Chou, "An opportunistic multicast routing protocol for wireless mesh networks," *37th Annual IEEE Conference on Local Computer Networks*, Clearwater, FL, 2012.