

---

# **Naddafzadeh Shirazi, Ghasem <naddaf[at]ece.ubc.ca>**

<http://ece.ubc.ca/~naddaf>

Department of Electrical and Computer Engineering, The University of British Columbia (UBC), Vancouver, BC, Canada

---

## **QUALIFICATIONS AND WORK EXPERIENCE**

---

### **1) Professional:**

DSP Software Developer - 8 month internship, Research In Motion (RIM), Waterloo, Canada [4 Patents]. 2011

Joint Research Engineer, Institute for Infocomm Research (I<sup>2</sup>R), Singapore. 2007-2008

### **2) Programming (Expert at C/C++, Python, Java, Javascript, Matlab, and PHP):**

Also experienced at working with CUDA™ parallel programming, openCV, subversion and writing app (FB/BB) platforms.

Ranked among top 10% worldwide and top 10 in Canada in IEEEExtreme 3.0,4.0,5.0 programming contests. 2009-2011

Distinguished programmer, eGenting programming contest, Singapore 2007

Ranked 3<sup>rd</sup>, 2<sup>nd</sup>, ACM programming contest, Shiraz University, Iran. 2004 and 2005

### **3) Executive:**

Vice President, Student Services, UBC Electrical & Computer Engineering Graduate Student Association (ECEGSA). 2012

Seminars and workshop leader, IEEE student branch, UBC. 2012

### **4) System Administration and Security:**

Webmaster, UBC Data Communication Lab. and UBC Thunderbird Residence. 2011,2012

Linux administrator, National University of Singapore (NUS). 2008

Ranked 4<sup>th</sup> in network security challenge, NUS. 2007

Windows and Linux administrator, Kharazmi Computer Center, Shiraz University. 2004-2005

Member of Shiraz University and IRTC FATA network security teams, Iran. 2004

### **5) Teaching:**

Teaching Assistant, "CICS 216: Data Structures and Algorithms Using C++", UBC. 2009-present

English Instructor, Aboreihan Language Institute, Shiraz, Iran 2005-2006

Teaching Assistant, "Data Structures and Algorithms", Shiraz University. 2004

Teacher, "Computer fundamentals", Razi High School, Iran. 2003-2004

---

## **EXCELLENCE AND AWARDS**

---

UBC, Faculty of Applied Science Graduate Award. 2011

UBC, Partial Tuition and Research Assistant Scholarships. 2009

Best Student Paper Award, ICUWB'08, Germany. 2008

Offered EIPRS and NICTA Scholarships, Australian National University. 2008

International Graduate Scholarship (IGS) award, A\*STAR, Singapore. 2006

Accepted for pursuing M.Sc. Degree, Sharif University of Technology, Iran. 2006

Ranked 10<sup>th</sup> and 19<sup>th</sup> in the first and second stages of the eleventh National Computer Science Olympiad, Iran. 2006

Gifted student award, ranked 2<sup>nd</sup> (out of 70) in B.Sc., Shiraz University, Iran. 2006

Among top 3% students in the National B.Sc. and M.Sc. entrance exams, Iran. 2001 and 2006

## EDUCATION

---

PhD Candidate, Thesis title: "Optimization Techniques for Performance Enhancement in Ultra-Wideband (UWB) Wireless Sensor Networks.", GPA 86%, UBC, Canada. 2009-present

Masters Degree, Thesis title: "Cooperative Communications in Wireless Networks: Novel Approaches in MAC Layer.", GPA: 4.63 out of 5.0 (93%), NUS, Singapore. 2007-2008

B.Sc. Degree, Project title: "CLESTCON: A CLIPS-based Expert System for Traffic Control in Networks", GPA: 17.39 out of 20.0 (87%), Shiraz University, Iran. 2001-2005

### Selected Courses:

|  |    |
|--|----|
| Statistical signal processing (UBC)                          | A  |
| Coding and information theory (UBC)                          | A  |
| Wireless sensor networks (NUS)                               | A  |
| Wireless network protocols (NUS)                             | A  |
| Advanced topics in algorithm design and analysis (Shiraz U.) | A+ |

## RESEARCH INTERESTS

---

UWB sensor networks, QoS, modeling and optimization.

Wireless sensor network localization: Convex optimization techniques.

Compressive Sampling

Applications of machine learning and game theory in wireless networks, e.g. for vehicular communication, 4G networks (WiMAX/LTE), cognitive radio, and cooperative relay networks.

## SELECTED PUBLICATIONS

---

### Journal:

**G. Naddafzadeh-Shirazi**, and L. Lampe, "Lifetime Maximization of UWB Sensor Networks for Event Detection Applications", IEEE Trans. on Signal Processing, Vol. 59, No. 9, pp. 4411-4423, Sep. 2011.

**G. Naddafzadeh-Shirazi**, M. B. Shenouda, and Lutz Lampe, "Distributed Second Order Cone Programming for Sensor Network Localization with Anchor Position Uncertainty", submitted to IEEE Trans. on Mobile Computing, Aug. 2011.

**G. Naddafzadeh-Shirazi**, P.-Y. Kong, and C.-K. Tham, "Optimal cooperative retransmission schemes for IR-UWB networks", IEEE Trans. on Mobile Computing, Vol.9, No.7, pp. 969-981, Jul. 2010.

**G. Naddafzadeh-Shirazi**, P.-Y. Kong, and C.-K. Tham, "Distributed Reinforcement Learning Frameworks for Cooperative Retransmission in Wireless Networks", IEEE Trans. on Vehicular Technology, Vol. 59, No. 8, pp. 4157-4162 Oct. 2010.

**G. Naddafzadeh-Shirazi**, P. Wang, X. Dong, and C.-K. Tham, "Target Tracking with QoS Support in Large Wireless Sensor Networks", WSN Journal, Dec. 2009.

**G. Naddafzadeh-Shirazi**, P.-Y. Kong, and C.-K. Tham, "A Low-Overhead Cooperative Retransmission Scheme for IR-UWB Networks", Hindawi Research Letters in Communications, Vol. 2008.

### Conference:

**G. Naddafzadeh-Shirazi**, Michael B. Shenouda, and Lutz Lampe, "Second Order Cone Programming for Sensor Network Localization with Anchor Position Uncertainty", 8th Workshop on Positioning, Navigation, and Communication (WPNC) 2011.

S. Hosseini-zhad, **G. Naddafzadeh-Shirazi**, and V. C. M. Leung, "RLAB: Reinforcement Learning Adaptive Broadcast for Vehicular Communication", Vehicular Technology Conference (VTC, Spring) 2011.

**G. Naddafzadeh-Shirazi**, and Lutz Lampe, "Lifetime Maximization of UWB Sensor Networks for Event Detection Applications", in: IEEE International Communication Conference (ICC'10).

**G. Naddafzadeh-Shirazi**, P.-Y. Kong, and C.-K. Tham, "A cooperative retransmission scheme for IR-UWB networks", in: IEEE International Conference on Ultra-Wideband (ICUWB), 2008, **Best Student Paper Award**.

**G. Naddafzadeh-Shirazi**, P.-Y. Kong, and C.-K. Tham, "Markov Decision Process Frameworks for Cooperative Retransmission in Wireless Networks", in: IEEE Wireless Communications and Networking Conference (WCNC), 2009.

**G. Naddafzadeh-Shirazi**, P.-Y. Kong, and C.-K. Tham, "A Cooperative Retransmission Scheme in Wireless Networks with Imperfect Channel State Information", in: IEEE Wireless Communications and Networking Conference (WCNC), 2009.

## COMMUNITY

---

Session chair and a member of organization committee, ICUWB'09. *Vancouver, Canada*  
Technical program assistant, VTC'08 Spring. *Singapore*  
Reviewer of IEEE TSP, TWC, TComm, and TVT journals and VTC and ICC conferences. *2008-2011*  
IEEE graduate student member. *2008-present*  
IEEE communication society (ComSoc) member *2010*

## SEMINARS AND CONFERENCE PRESENTATIONS

---

UWB sensor networks: challenges and applications. *Banff Summer School, 2010.*  
Challenges of UWB MAC and routing design. *UBC, 2009.*  
Cooperative communication in UWB networks. *Shiraz University, 2009.*  
A cooperative retransmission scheme for IR-UWB networks *Germany, 2008.*  
Cooperative communications in wireless networks. *IR, Singapore, 2008.*  
Introduction to Bluetooth technology. *Shiraz University, 2006.*  
Introduction to genetic algorithms. *Shiraz University, 2005.*

## ENGLISH QUALIFICATIONS

---

GRE:

*800Q, 450V (1350 / 1600 and 4 / 6 A)*

TOEFL:

*29R, 29L, 22S, 28W (108 / 120)*

IELTS:

*7.5R, 7.5L, 7.0S, 6.0W (7.0 / 9.0)*

## CONTACT INFORMATION

---

Address *KAIS#4090-2332 Main Mall, Vancouver, BC, Canada V6T-1Z4.*  
Webpage *<http://ece.ubc.ca/~naddaf>*  
Email *naddaf[at]ece.ubc.ca*

## REFERENCES

---

Prof. Lutz Lampe, ECE, University of British Columbia *lampe[at]ece.ubc.ca*  
Prof. Chen-Khong Tham, ECE, National University of Singapore *eletck[at]nus.edu.sg*  
Prof. Henk Wymeersch, Chalmers University, Sweden *henk[dot]wymeersch[at]ieee.org*