Reza Azimi

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SUMMARY OF QUALIFICATIONS

- 6+ years of research and engineering experience in wireless communications and Cyber-physical systems, specializing in vehicular networks and active safety.
- Intensive experience in both simulation and emulation of distributed systems, sensor networks, vehicular networks and strong programming (C++) skills.
- Exceptional interpersonal, leadership and communication skills with a dedication to promoting effective teamwork.

EDUCATION

CARNEGIE MELLON UNIVERSITY, Pittsburgh, PA, USA

- Ph.D. candidate in Electrical and Computer Engineering	August 2009 – May 2015
- Master of Science in Electrical and Computer Engineering	May 2011

ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE, Lausanne, Switzerland

- Bachelor of Science in Communication Systems	August 2005- May 2009

PROFESSIONAL EXPERIENCE

CARNEGIE MELLON UNIVERSITY

Real Time and Multimedia-Systems Lab (RTML), Director: Prof. Rajkumar
Research Assistant   August2009 – Present

- Thesis Statement: *A fusion of vehicular networks and vehicle-resident sensing enables co-operative driving among autonomous and manual vehicles, leading to safety and high throughput at intersections.*
- Designed and developed new vehicular networks protocols using Vehicle-to-Vehicle (V2V) communications to enable co-operative driving in the context of autonomous vehicles.
- Designed and developed new methods to enable the safe co-existence of manual and autonomous vehicles at intersections.
    - Fusion of V2X (V2V, V2I) and Perception (cameras, radar, lidars).
- Designed and developed the hybrid emulator-simulator for vehicular networks, called AutoSim
    - Designed and implemented various communications, mobility, GPS, controller and digital map models, etc.
    - Enabled communication between real and simulated vehicles through DSRC.

GENERAL MOTORS-CARNEGIE MELLON UNIVERSITY

Autonomous Driving Collaborative Research Lab (AD-CRL)
Vehicle Information Technology Collaborative Research Lab (VIT-CRL)
Researcher   August2009 – Present

- Designed and developed active safety applications using vehicular communications (V2X)
    - Intersection management protocols for the safe and efficient passage of vehicles through intersections and roundabouts.
- Prototyped and implemented the proposed protocols on CMU-GM autonomous vehicle.

QUALCOMM COMPANY

Intern   Summer 2014

- Systems Group, Manager: Peerapol, Tinnakornsrisuphap
- Performance Improvement of Video Telephony over WLAN

Intern   Summer 2013

- System Integration Group, Manager: Michael Dimare, Mentor: Vito Salluce
- System performance evaluation of LTE-D: Designing test cases, deployment, evaluation and analysis
- 802.11 n/p: Throughput evaluation of Wi-Fi/DSRC on Kingfisher

TEACHING EXPERIENCE

CARNEGIE MELLON UNIVERSITY, Electrical and Computer Engineering Department
Teaching Assistant

"Real-Time Embedded Systems" (Graduate Level). Prof. Rajkumar	Fall 2014
"Wireless Sensor Networks" (Graduate Level). Prof. Rajkumar	Spring 2014 and Spring 2012

ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE, System de Communication
Teaching Assistant

"Geometry Analytic". Prof. Mohamedi	Spring 2008
"Analysis II". Prof. Roethlisberger & Prof. Woringer	Fall 2007 & Spring 2008

INVENTION PATENT

- R. Azimi, P. Mudalige, R. Rajkumar, G. Bhatia, "Efficient Intersection Autonomous Driving Protocol", Publication number US20130304279 A1, Publication date Nov 14, 2013

PUBLICATIONS

- R. Azimi, G. Bhatia, R. Rajkumar, P. Mudalige, "STIP: Spatio-Temporal Intersection Protocols for Autonomous Vehicles", ACM/IEEE 5th International Conference on Cyber-Physical Systems (ICCPS), 2014

- R. Azimi, G. Bhatia, R. Rajkumar, P. Mudalige, "V2V Intersection Autonomous Driving", **Journal** of Transactions on Intelligent Transportation Systems, 2014 (submitted)

- R. Azimi, G. Bhatia, R. Rajkumar, P. Mudalige, "V2V-Intersection Management at Roundabouts", International **Journal** of Passenger Cars- Mechanical Systems, 2013

- R. Azimi, G. Bhatia, R. Rajkumar, P. Mudalige, "Reliable Intersection Protocols using Vehicular Networks", ACM/IEEE 4th International Conference on Cyber-Physical Systems (ICCPS), 2013

- R. Azimi, G. Bhatia, R. Rajkumar, P. Mudalige, "Impact of Position Inaccuracy on V2V Intersection Protocols",
  ACM/IEEE 4th International Conference on Cyber-Physical Systems, WiP (ICCPS-WiP), 2013

- R. Azimi, G. Bhatia, R. Rajkumar, P. Mudalige, "V2V Intersection Management at Roundabouts",
  Active Safety, SAE world congress, April 2013

- R. Azimi, G. Bhatia, R. Rajkumar, P. Mudalige, "Intersection Management using Vehicular Networks",
  Active Safety, SAE world congress, April 2012

- R. Azimi, G. Bhatia, R. Rajkumar, P. Mudalige "Vehicular networks for collision avoidance at intersections", SAE International **Journal** of Passenger Cars - Mechanical Systems, 2011

- R. Azimi, G. Bhatia, R. Rajkumar, P. Mudalige "Vehicular networks for collision avoidance at intersections", Active Safety, SAE world congress, April 2011

COMPUTER SKILLS

- **Languages:** C++, C, Java, Perl, Shell, Python
- **Hardware:** VHDL, CAN bus
- **Software:** MATLAB, Opnet, AutoSim, GrooveNet
- **Operating Systems:** Linux, MS Windows and UNIX environments
- **Others:** MS Excel, MS Word, MS PowerPoint

PROFESSIONAL ACTIVITY

Reviewer for
- IEEE Conference on Intelligent Transportation Systems (ITSC), 2011-2014
- IEEE Conference on Control, Systems & Industrial Informatics (ICCSII), 2012-2014
- International Workshop on Cyber Security and Privacy (CSP), 2012-2014

LEADERSHIP

- President of PSO (Persian Student Organization), CMU (2012-2014)
- Communication officer of PSO (Persian Students Organization), CMU (2009-2010)
- Director of communications of IRSA (Iranian Students Association), EPFL (2007-2008)

SELECTED HONORS

- Doctorate Research Fellowship, Carnegie Mellon University, 2009 – 2015
- Doctorate Research Scholarships through NSF and GM, 2009-2015
- Top student exchange-student scholarship, EPFL
  - to fulfill the last year of Bachelor of Science at Carnegie Mellon University
- Award of merit for introducing autonomous driving research to Portuguese national TV, CMU

REFERENCE

- References available upon request