

Javad Amiryan

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Summary

I'm a Robotics and AI enthusiast who dedicated 7 years of his life to design, build and develop intelligent mobile robots. Having successfully completed formal studies in Electronics and then graduated from Sharif University of technology in AI, I'm seeking a PhD position that will allow me to further my understanding and conduct research in the area.

Research Interests

- Robot and Machine Vision
- Motion Planning and Mobile Robot Navigation
- Multi-agent Systems
- Machine Learning and Graphical Models

Education

Master of Science in Computer Engineering (Artificial Intelligence)
Sharif University of Technology, Tehran, Iran 2012 - 2014
GPA: 16.66/20

Ranked 11th in nationwide M.Sc. university entrance exam for Artificial Intelligence, Iran 2012

Bachelor of Science in Electrical Engineering (Electronics)
Shahid Behesti University (National University of Iran), Tehran, Iran 2007 - 2012
GPA: 15.44/20

Top 0.6% nationwide entrance exam of Iranian Universities, among more than 300,000 participants. 2007

Diploma in Mathematics and Physics
Tiz-Hooshan School (National Org for Development of Exceptional Talents), Kermanshah, Iran 2000 - 2007
GPA: 18.00/20

Graduate Courses

Machine Learning, Statistical Pattern Recognition, Computational Intelligence, Image Processing, Planning in Artificial Intelligence, Speech Processing, Stochastic Processes.

Professional Experience

Team Leader @ Cyrus Robotics (Small-Size Soccer Team of Shahid Beheshti Univ.) 2010 - 2015

Besides experiencing a professional team work management of seven graduate and undergraduate students, I have been designing and developing electronic boards and embedded systems of the robots as electronic designer until 2012. During this period, a small wireless network was formed using Zigbee technology to enable communication between robots. Decision commands sent from Off-field computer were parsed and executed with ARM-based micro-controller that run a PI controller to drive the robot wheels at a desired speed and trigger the kicker module.

After 2012 I joined the software group and rewritten AI codes to c++. I developed the motion planning module based on an idea in my MSc thesis. We also introduced an approach to improve the robot movements and compensating inaccuracies in robot building using a Takegi-Sugeno fuzzy method. In 2014 we

implemented a speech recognition system to convert human voice signals into robot commands in order to facilitate robot learning.

Computer Vision Expert @ Sepehr Etelaat Co. (Related to Sharif Univ.) May 2015 - present
We are developing a software for adding virtual advertisement to sport videos. A main processing step in this system is to estimate camera calibration based on corresponding points in soccer pitch. The vision engine has several processing modules including camera position estimation, camera pose blind search for initializing pose tracker, shot boundary detection, Levenberg–Marquardt Based Optimizer and etc. Many AI techniques are utilized in this software such as GA, Kalman Smoothing, Optical Flow etc.

Computer Vision Expert @ Spad System Co. April 2016 - present
We are designing an automatic license plate recognition system for Iranian vehicles. We extracted the foreground areas in video frames using motion segmentation technique, then using a simple LBP descriptor, plate regions will be detected. We utilized standard C++ libraries to train a Persian OCR system to extract plate text.

Teaching Experience

- *Teaching Assistant* of Machine Vision course (CE-40687) Spring 2014
Dr. Mansour Jamzad (Sharif University of Technology)
- *Teaching Assistant* of Digital Design course Spring 2010, Spring 2011
Dr. Somayeh Timarchi (Shahid Beheshti University)
- *Lecturer* of Introduction to AVR Microcontrollers 2009-2011
At Scientific Association of Electrical Engineering (Shahid Beheshti University)

Publications

- (TDP) **J. Amiryan**, S. Raeessi, P. Payandeh, B. Nadimi, N. Nouri, M. R. Kamali, E. Nazemi, "**CYRUS 2016 Team Description Paper**," 2016.
- **J. Amiryan**, M. Jamzad, "**Adaptive motion planning with artificial potential fields using a prior path**," Robotics and Mechatronics (ICROM), 2015 3rd RSI International Conference on, 2015.
- (MSc Thesis) **J. Amiryan**, "**Dynamic Motion Planning and Obstacle Avoidance Simulation for Autonomous Robot-car in Webots**," MSc Thesis, Department of Computer Engineering, Sharif University of Technology, August 2014.
- M. Nazari, **J. Amiryan**, E. Nazemi, "**Improvement of robot navigation using fuzzy method**," AI and Robotics and 5th RoboCup Iran Open International Symposium (RIOS), 2013 3rd Joint Conference of. IEEE, 2013.
- J. Mazloun, A. Jalali, **J. Amiryan**, "**A novel bidirectional neural network for face recognition**," Computer and Knowledge Engineering (ICCKE), 2012 2nd International eConference on. IEEE, 2012.
- (BSc Project Report) **J. Amiryan**, J. Kamali, "**Automatic Traffic Control System With Police Robot**," BSc. Thesis, Department of Electrical Engineering, Shahid Beheshti University, March 2012.

Skills

- **OS:** Microsoft Windows; Linux (Ubuntu, Fedora, CentOS); Android.
- **Office Tools:** L^AT_EX; Libre Office; Microsoft Word, Excel, PowerPoint, Visio.
- **Graphic Tools:** Adobe Photoshop, Premiere; 3ds Max.
- **Programming:** C/C++, Matlab, Python, Java.
- **Database:** PostgreSQL, ODB (ORM).
- **Version Control:** git.

- **AI and Robotics Tools:** OpenCV, Image Processing Toolbox, Webots Simulator, Weka.
- **Embedded Design:** ARM Processors (AT91, LPC), Atmel AVR Family, C51 Family; Altium Designer, Proteus, Protel.

Activities

- I love robots and robotic competitions, I have participated in many robotic events in fields of intelligent mouses and soccer robots. I have also been involved organizing some robotic events and already am a member of technical committee of Small Size League at Iran Open. [Link](#).
- I am strongly interested in Football and am a fan of Perspolis club. Going to stadium and encouraging my favorite team is one of my most exciting entertainments.
- I do Body-building, Mountaineering, play futsal, and also some computer sport games such as FIFA, PES and NFS.

References

- **Dr. Mansour Jamzad**
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- **Dr. Eslam Nazemi**
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