

Payam Nikdel

Research assistant at Autonomy lab
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Education

Simon Fraser University (SFU)

Ph.D. Computing Science

Simon Fraser University (SFU)

M.Sc. Computing Science

- Thesis Topic: Robot Follows Ahead of the Leader
- GPA: 4.13 out of 4.33; Expected Graduation: Dec 2018

Burnaby, Canada
Jan 2019 - Sep 2022
Burnaby, Canada
Sep 2016 - Present time

Shiraz university

B.Sc. Computer Software Engineering

- GPA: 17.82/20; Achieved the highest GPA among all B.Sc students

Shiraz, Iran
Sep 2010 - Feb 2015

Work Experience

Researcher (Internship)

ScopeMedia Inc.

- Designed a multi-person tracker using state-of-the-art techniques (OpenPose, Yolo and different trackers)

Vancouver, Canada
Jan. 2018 - Apr. 2018

System Developer

Petro Gas Jahan Engineering company

- Improved the company network performance tools and contributed to develop software

Tehran, Iran
May. 2015 - Jun. 2016

Android Application and Web Development

Cafebazaar (a famous reputable App store in Iran)

- Participated in creating the [Divar Android application](#) and the [Divar website](#) using Django

Tehran, Iran
Apr. 2012 - Sep. 2012

Translator Software

Text Processing Lab at University of Tehran

- Participated in making an English to Persian translator using C++ language

Tehran, Iran
Sep. 2011 - Jan. 2012

Publications

[The Hands-Free Push-Cart](#)

Dr. Richard Vaughan

Presented a human model for an autonomous mobile robot that follows a walking user while staying ahead of them. Used multi-modal person detection and a human-motion model that considers obstacles to predict the future path of the user. This [paper](#) is in proceeding of **ICRA 2018**. **Tools:** ROS, Stage, C++, Python, OpenCV

Summer 2017

[Reinforcing a Supervised Deep Network for Maximal Map Exploration](#)

Dr. Oliver Schulte and Dr. Richard Vaughan

Built a hybrid network trained by a supervised algorithm to learn preliminary tasks, like obstacle avoidance, and then used Deep Reinforcement Learning to learn maximal map exploration. This work presented as a poster in **IROS 2017**. **Tools:** Tensorflow, Keras, ROS, Stage, Python, C++, OpenCV

Spring 2017

Research and Academic Projects

Lip Reading Using Dual Attention Model

Designed an audio-visual lipreading system that can translate sequence of face images to natural language. To do so generated a data set containing a sequences of people's mouth images aligned with audio and subtitle from YouTube videos then trained a dual attention model. **Tools:** Pytorch, Python, OpenCV

Spring, Fall 2018

[Learning and Tracking Semantic Labels From Occupancy Grids](#)

Dr. Richard Vaughan

Building an occupancy grid map during online and at the same time use a neural network (Based on ResNet34 and YOLOv2) to detect, locate and say the target classes around the robot. **Tools:** Pytorch, ROS, Stage, Python, OpenCV

Spring, Fall 2018

- Describe The Path Using Attention Model** Fall 2017
Dr. Anoop Sarkar and Dr. Richard Vaughan
 Proposed a way to help visually impaired people navigate through an unknown indoor environment. The robot provides environmental information and navigational instructions for visually impaired or blind people. It translates sequence of laser scanner data to human readable language. **Tools:** Pytorch, ROS, Stage, Python, OpenCV
- Daydream Ant Algorithm** Fall 2016
Dr. Richard Vaughan
 Presented a new approach based on SO-LOST algorithm by adding a thinking part. Daydream algorithm will reduce the path-finding time and it will guarantee to find an optimal path. **Tools:** ROS, Stage, Python, C++
- Person Re-identification Using Point-cloud images** Fall 2016
Dr. Greg Mori
 Enhanced and compared several deep-learning approaches for identifying people using 3D point cloud data. **Tools:** Tensorflow, Keras, ROS, Python, OpenCV
- Control the mouse cursor with eyes or hands** Fall 2014
Dr. Zohreh Azimifar
 controlled the mouse pointer by tracking the user's eyes or hand (two separate applications). **Tools:** C++, OpenCV
- 3D Multiplayer Game With AI** Spring 2014
Dr. Farshad Khunjush
 Developed a multiplayer online first person shooter game with AI for enemies. **Tools:** Unity3D, C#, Photon network
- GPU Efficient Image Processing** Fall 2013
Dr. Farshad Khunjush
 Utilized GPU to apply filters on high resolution images on CUDA platform. **Tools:** OpenCL, CUDA, C++

Technical Skills

Programming Languages:

- Python ○ C ○ Java ○ C++ ○ C#
- HTML ○ CSS ○ JavaScript ○ SQL ○ Matlab

Programming Platforms & Framework:

- Pytorch ○ TensorFlow ○ ROS ○ Keras ○ OPENCV
- OPENCL ○ Unity ○ Git ○ Android ○ LATEX

Selected Teaching Experiences

Computing Laboratory	Fall 2016 & Fall 2017
Intro to Computing Science and Programming II	Fall 2016 & Fall 2017
Digital Design	Fall 2014 & Spring 2014
Artificial Intelligence	Spring 2014 & Fall 2013
Advanced Programming	Fall 2013
Data Structures And Algorithms	Spring 2013
Fundamentals of Computer Programming	Fall 2012

Awards, Grants & Honours

Fellowship and RA/TA position from The Simon Fraser University	Fall 2018
Fellowship and RA/TA position from The University of Victoria	Spring 2016
Fellowship and RA/TA position from The Simon Fraser University	Spring 2016
Ranked 1st in Computer Engineering students	Fall 2014
Awarded as the Best Undergraduate Student in Computer Engineering	Spring 2014
Ranked 18th in Iranian National Computer Olympiad for university student	Spring 2014
Ranked 4th in Kashan ACM competition among all national universities	Spring 2011