Alireza Taheri Tajar

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RESEARCH INTERESTS

- Deep Learning
- Computer Vision
- Robotics
- AI Cyber Security

EDUCATION

Ph.D. Student in Computer Science and Cyber Security (Aug 2023– Present)
Augusta University-Georgia Cyber Center, Augusta, GA, USA
GPA: 4.0/ 4.0

Master of Science in Electrical and Control Engineering (Sep 2016– Sep 2019)
Bu-Ali Sina University, Hamedan, Iran
Dissertation title: ''Counting, Classifying and Detecting the Speed of Vehicles based on Computer Vision.''
GPA: 3.31 / 4.0 – (Top student)

Bachelor of Science in Electrical Engineering (Sep 2012– Sep 2016)
Bu-Ali Sina University, Hamedan, Iran
Dissertation title: ''Design and Fabrication of Camera Robot''
GPA: 3.25 / 4.0 – (Top student)

PUBLICATIONS

- Taheritajar, Alireza and Reza Rahaeimehr. "Acoustic Side Channel Attack on Keyboards Based on Typing Style of Users." Submitted to The International Conference on Availability, Reliability, and Security (ARES 2024). Link
- Taheritajar, Alireza, Zahra Mahmoudpour Harris, and Reza Rahaeimehr. "A Survey on Acoustic Side Channel Attacks on Keyboards." Submitted to the 2024 International Conference on Information and Communications Security (ICICS 2024). Link
- Taheri Tajar, A., Ramazani, A. & Mansoorizadeh, M. "A lightweight Tiny-YOLOv3 vehicle detection approach". Journal of Real-Time Image Processing (2021). Link
- Heidari, E., Abdolmaleki, M., TaheriTajar, A., Mansoorizadeh, M., Dezfoulian, M., "Automatic image description with attention mechanism and repetitive language model." 4th National Conference on Computer, Information Technology and Application of Artificial Intelligence. Shahid Chamran University of Ahwaz (2021). (In Persian). Link

WORK EXPERIENCE

Graduate Research Assistant (Aug 2023 – Present)
Augusta University-Georgia Cyber Center, Augusta, GA, USA
- Researcher on fields of cyber security concepts focusing on side-channel attacks under the supervision of Dr. Reza Rahaeimehr

Machine Learning Engineer (Feb 2021 – July 2023)
Experts Group (AIEX), Montreal, QC, Canada
- Applied deep learning to computer vision problems and participated in related cutting-edge research.
- Developed an artificial intelligence-based framework to be implemented on edge devices and GPU servers in the field of computer vision for the visual industrial inspection platform.

Technical Manager (Sep 2017 - Mar 2020)
Sina ATI NET, Hamadan, Iran
- Designed and fabricated Vehicle Detection systems for installation on roads and highways.

Co-Founder and Technical Manager (Jan 2015 - Sep 2017)
Atitek Faradid Pars, Hamedan, Iran
- Manufactured industrial robots to use in the food industry.

TEACHING EXPERIENCE

- Teaching assistant for Microprocessors Design course (Spring 2017)
- Teaching assistant for Logic Circuits Design course (Fall 2017)
- Teaching assistant for the Signals and Systems course (Spring 2016)
- Teaching assistant for the Electronic Circuits course (Fall 2016)

AWARD AND HONORS

- Received certification of appreciation for presenting on 'Your Typing Style Leaks: What Are You Typing?' at AFCEA TechNet from CSM, U.S. Army Command Sergeant Major, and Major General, U.S. Army Commanding General. 2023
- Admitted to Bu-Ali Sina University's graduate program in the fall of 2016 without entrance exams, a privilege granted to only 10% of top students. 2016
- Bu-Ali Sina University Award as an Exceptionally Talented student. 2014

PATENTS

- Apparatus for counting and classifying vehicles using an inductive loop. (I.R. 139850140003008739) 2020
- Smart remote-controlled robot for cleaning hemispherical cameras. (I.R. 139850140003008741) 2020
- Smart agricultural robot able to secrete toxins with the variable valve arrangement. (I.R. 139550140003003919) 2016

PROJECTS

AIEX: 2021

- Implemented Salient Object Detection and Instance Segmentation algorithms using Yolov8, Yolov7, Yolov5, Yolov3, Mask-RCNN, Yolact, Yolact-Edge, and U2net.
- Optimized models for edge devices and GPU servers using Pytorch Quantization and TensorRT.
- Developed Restful APIs for integrating Computer Vision services to Back-End and Front-End.

Bu-Ali Sina University: 2019

- Developed RESTful Applications for Object Detection using YOLOv3 and Django.
- Developed Vehicle Detection Applications using Tiny-YOLOv3.

ATI NET: 2018

- Designed and fabricated an Inductive Loop Vehicle Detector to use on roads and highways.

Atitek: 2016

- Designed and fabricated an industrial robot to use in the food industry.

RoboSina: 2014

- Designed and fabricated soccer robots for the Iran Open International Competition.
- Design and fabricate Line Follower Robot.

VOLUNTEER AND MEMBERSHIPS

- Vice President of Computer & Cyber Graduate Student Organization at Augusta University 2023
- Head of Entrepreneurship Student Committee, Bu-Ali Sina University, Hamedan, Iran 2018
- Member of the Executive Committee of the 14th Alumni Conference of the Festival of Nations 2016
- Head of Electrical and Robotic Student Committee, Bu-Ali Sina University, Hamedan, Iran 2015
- Coordinator of 1st Conference of Industry Relationship with University, Hamedan, Iran 2013

TECHNICAL SKILLS

- Programming languages: **Python, MATLAB, C**
- Machine Learning Frameworks: **Hugging Face, LangChain, Tensorflow, PyTorch, Keras, TensorRT, OpenCV, Detectron2, Mlflow**
- Embedded Boards: **NVIDIA Jetson Nano, Raspberry PI**
- Others: **Linux, Windows, Docker, Git, Jupyter, Anaconda**

LANGUAGES

- **English** – Proficient (TOEFL IBT Overall Score: 86)
- **Farsi** (Persian) – Native

- More information is available upon request.