

# Hadi Ghahremannezhad

Ph.D Candidate in Computer Science

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## EDUCATION

- **New Jersey Institute of Technology (NJIT)** New Jersey, USA  
*PhD. candidate - Computer Science; GPA: 3.89*  
*Thesis: Advanced Traffic Video Analytics for Robust Traffic Accident Detection*  
*Sep 2018 - Present*
- **Shahid Beheshti University (SBU)** Tehran, Iran  
*MSc. - Software Engineering; GPA: 3.44*  
*Thesis: Improving the Performance of Vehicle Detection in Aerial Images Using Deep Neural Networks*  
*Sep 2014 - Sep 2017*
- **K.N. Toosi University of Technology (KNTU)** Tehran, Iran  
*BSc. - Software Engineering*  
*Thesis: Application Design and Implementation for 3D Image Processing in Mobile Phones*  
*Sep 2009 - Sep 2014*
- **Relevant Courses:**

Data Mining	Machine Learning	Data Structures & Algorithm Design
Pattern Recognition	Artificial Intelligence	Advanced Programming
Probability & Statistics	Neural Networks	Image Processing
Linear Algebra	Multimedia Systems	Geometry Processing

## PUBLICATIONS

- **A New Online Approach for Moving Cast Shadow Suppression in Traffic Videos:** IEEE International Conference on Intelligent Transportation Systems, 2021
- **Anomalous Driving Detection for Traffic Surveillance Video Analysis:** IEEE International Conference on Imaging Systems and Techniques, 2021
- **Robust Road Region Extraction in Video Under Various Illumination and Weather Conditions:** IEEE International Conference on Image Processing, Applications and Systems, 2020
- **A Statistical Modeling Method for Road Recognition in Traffic Video Analytics:** IEEE International Conference on Cognitive Info communications, 2020
- **Automatic Road Detection in Traffic Videos:** IEEE International Conference on Big Data and Cloud Computing, 2020
- **A Real Time Accident Detection Framework for Traffic Video Analysis:** 16th International Conference on Machine Learning and Data Mining, 2020
- **A New Adaptive Bidirectional Region-of-Interest Detection Method for Intelligent Traffic Video Analysis:** IEEE International Conference on Artificial Intelligence and Knowledge Engineering, 2020
- **Vehicle Classification in Video Using Deep Learning:** International Conference on Machine Learning and Data Mining, 2019

## EXPERIENCE

- **New Jersey Institute of Technology (NJIT)** New Jersey, USA  
*Graduate Student Researcher under Dr. Chengjun Liu* *Sep 2018 - Present*
  - **Statistical Data Analytic:** Developed a system for statistical traffic video analytics using OpenCV (C++) including several projects for automatic foreground detection, road segmentation, accident detection, and cast shadow removal in surveillance videos
  - **Deep Learning Applications:** Worked on CNN-based object detection methods for vehicle classification (C, C++)
- **New Jersey Institute of Technology (NJIT)** New Jersey, USA  
*Graduate Student Instructor* *Sep 2014 - Sep 2017*
  - **Concepts of Programming Languages:** Led weekly lectures, office hours, and recitations, code testing in Java/C++/Python
- **Shahid Beheshti University (SBU)** Tehran, Iran  
*Graduate Student Researcher under Dr. Ali Zakerolhosseini* *Sep 2014 - Sep 2017*
  - **Research towards System Development :** Developed a vehicle detection system using Tensorflow (Python)
- **K.N. Toosi University of Technology (KNTU)** Tehran, Iran  
*Graduate Student Researcher under Dr. Davud Asemani* *Sep 2009 - Sep 2014*
  - **Research towards System Development :** Developed a 3D Graphical Mobile Application system using OpenGL (Java/C++)

## PROJECTS

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- **Traffic Video Analytic:** Research oriented - Funded by [NJDOT](#) (C++) . Tech: C++, OpenCV ([link](#))
- **Vehicle Classification (Deep Learning, Computer Vision):** AI model to classify 6 types of vehicles. Tech: C, C++, OpenCV ([link](#))
- **Automatic Road Segmentation in Traffic Surveillance Videos (Computer Vision, Image Processing):** A New Adaptive Bidirectional ROI Detection Method for Intelligent Traffic Video Analysis. Tech: C++, OpenCV ([link](#))
- **Hits & PageRank algorithms (Web Development, Machine Learning):** Tech: Python, Java ([link](#))
- **Huffman Algorithm (Data Compression, Information Theory):** Tech: Java ([link](#))
- **Apriori Algorithm (Set Mining, Association Rule Learning):** Tech: Python ([link](#))
- **Brain Tumor Segmentation (Deep Learning, Computer Vision):** Tech: Python ([link](#))
- **Vehicle Detection & Classification in Aerial Images (Deep Learning, Remote Sensing):** Tech: Python ([link](#))

## FELLOWSHIPS & AWARDS

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- **Ying Wu '88 Endowed Fellowship** as a PhD research scholar in New Jersey Institute of Technology - Dec, 2019

## SKILLS SUMMARY

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- **Recent Experience:** C++, Python, L<sup>A</sup>T<sub>E</sub>X
- **Others:** JAVA, JavaScript, SQL, MATLAB, Linux
- **Frameworks:** OpenCV, NumPy, TensorFlow, Keras
- **Soft Skills:** Writing, Event Management, Time Management
- Diverse background in Computer Science, Math, and Software allows me to communicate to a wide scientific and general audience and begin contributing to any group immediately.
- I can readily learn and adapt to new discipline, area or environment and start pushing real results quickly.