

# ZOYA SHAFIQUE

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## Education

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### City College of New York

Ph.D., Electrical Engineering. 3.83 / 4.00

Relevant Coursework: *Fundamental Algorithms, Neural Nets with TensorFlow, Applied Machine Learning and Data Mining*

New York, NY

Aug 2022 – Present

### City College of New York

M.S., Electrical Engineering. 3.84 / 4.00

Relevant Coursework: *Computer Vision, Digital Image Processing, Advanced Statistics and Nonlinear Analysis*

New York, NY

Aug 2020 - May 2022

### Adelphi University

B.S., Physics, 3.97 / 4.00

Garden City, NY

Aug 2016 – May 2020

## Research Experience

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### Nonverbal Cue Recognition in Videos

May 2022 – Apr 2022

- Developed and optimized a 3D residual network in PyTorch to recognize facial expressions from a large-scale video dataset for action recognition, achieving comparable performance with state-of-the-art methods.
- Curated and labeled a 128-video dataset of first-person point-of-view conversations, enabling effective nonverbal communication and emotion recognition and detection tasks.
- Utilized transfer learning techniques to deploy the model for nonverbal cue action recognition on the curated dataset.

### The Properties and Applications of Position-Momentum Entangled Photons

Apr 2017- May 2020

- Conducted and managed two research projects while mentoring two underclassmen in a laboratory setting.
- Analyzed experimental data using MATLAB and applied various data fitting algorithms to assess results.
- Presented research findings at multiple academic conferences.

## Project Experience

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### Door Localization Using Computer Vision (Python)

Fall 2021

- Applied computer vision techniques such as edge detection, camera calibration, and line detection to localize doors in images. Calculated the position and orientation of doors relative to the viewer using OpenCV, NumPy, and SciKit-Image.

### Pseudocoloring Grayscale Images with K-means Clustering (MATLAB)

Spring 2021

- Employed k-means clustering to segment RGB images of flowers, separating the petals from the stem and background. Generated color maps from RGB segments and used them to create pseudocolored grayscale images in MATLAB.

## Selected Publications

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**Zoya Shafique**, Haiyan Wang, Yingli Tian. *Nonverbal Communication Cue Recognition: A Pathway to More Accessible Communication*. Proceedings of the Workshop on Women in Computer Vision, CVPR, 2023.

## Skills

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**Programming Languages:** Python, MATLAB, Java.

**Software/Environments:** PyTorch, TensorFlow, OpenCV, Pillow, SciKit-Learn, Pandas, Docker, Linux.