

VINEET R. SHENOY

CONTACT INFORMATION	1 Country Squire Lane Princeton Junction, New Jersey, 08550 (+1)6097517002 vshenoy4@jhu.edu https://vineetrshenoy.github.io/
EDUCATION	<div><div>Johns Hopkins University PhD., Electrical and Computer Engineering Advisor: Dr. Rama Chellappa</div><div>University of Maryland, College Park PhD, Electrical and Computer Engineering <i>Transferred with advisor to Johns Hopkins University</i></div><div>Rutgers University - New Brunswick B.S., Electrical and Computer Engineering, Computer Science <i>Summa Cum Laude</i></div></div> <div>Aug 2020 - Present August 2019 - August 2020 August 2014 - May 2018</div>
PUBLICATIONS	<p>Scalable and Real-Time Multi-Camera Vehicle Detection, Re-Identification, and Tracking Khorramshahi P., Shenoy V., Pack M., Chellappa R. <i>IEEE Transactions on Intelligent Transportation Systems, 2022 (under review)</i></p> <p>Multi-Class, Multi-Movement Vehicle Counting on Traffic Camera Data Shenoy V., Chellappa R. <i>Pre-Print 2022</i></p> <p>Towards real-time systems for vehicle re-identification, multi-camera tracking, and anomaly detection Peri N., Khorramshahi P., Rambhatla S., Shenoy V., Rawat S., Chen J.C. , Chellappa R. <i>Conference on Computer Vision and Pattern Recognition Workshops, 2020</i></p> <p>Study of Timing Constraints and SAS Overload in the CBRS Band using SAS-CBSD Protocol Anirudha Sahoo, Naceur El-Ouni, Vineet Shenoy <i>IEEE Globecom Conference Workshops 2019</i></p>
PROFESSIONAL AND ACADEMIC EXPERIENCE	<div><div>Johns Hopkins University – Anticipatory Ground-Level Imagery Analytics <i>Research Assistant</i></div><div>Blutag <i>Software Engineer</i></div></div> <div>January 2020 - Present September 2018 - August 2019</div> <ul style="list-style-type: none">Improved baseline object detector by 9 points to achieve state-of-the-art performance on operational traffic camera data using domain adaptation techniques.Integrated the detector along with a multi-target, multi-camera camera tracking system that re-identifies vehicles in different cameras.Collaborated with professional software engineers to integrate research into a real-time, multi-target multi-camera tracking system for the National Geospatial-Intelligence Agency (NGA).Integrated a recommendation system using LightFM (Python) into Elasticsearch for efficient searching of products.

- Generated classification labels for unknown products using PyTorch. Achieved 95% accuracy after 20 epochs of training.
- Built workflow for product classification using PyTorch, from image download, data cleaning, and preparation to training and model deployment as a web service using Microsoft Azure.

National Institute of Standards and Technology (NIST)

Intern, Wireless Communications

May - August 2017

- Simulated FCC rules (docket 12-354) for spectrum sharing in the 3.5GHz frequency band using C++.
- Augmented simulation to analyze over 10,000 units simultaneously passing messages and analyzed stresses on the system.
- Delivered 25-minute plenary presentation to over 200 interns, scientists, and employees of NIST.
- Publication "Study of Timing Constraints and SAS Overload in the CBRS Band using SAS-CBSD Protocol" accepted to IEEE Global Communications Conference Workshops (2019).

MITRE Corporation

Intern, Biometrics

May - July 2016

- Developed a 90% accurate age classifier in Python that recognized adults and minors based on facial photos.
- Recognized features from over 6000 images using Haar Cascades and trained features using a Support Vector Machine.

ASSISTANTSHIP

Research Assistant

Jan 2020 - Present

Advisor - Professor Rama Chellappa

Teaching Assistant

Aug 2019 - Dec 2019

Digital Computer Design (UMD ENEE446)

- Lead weekly discussion sessions, assisted students during office hours, and provided feedback through graded assignments

RELEVANT COURSEWORK

University of Maryland, College Park

- Statistical Theory
- Machine Perception
- Statistical Pattern Recognition
- Advanced Digital Signal Processing
- Information Theory
- Estimation and Detection Theory
- Convex Optimization
- Stochastic and Random Processes

SKILLS

Languages : Python, C, Java

Softwares : Pytorch, Tensorflow, OpenCV, Matlab, Docker

Operating System : Windows, Linux

ACHIEVEMENTS

- **Rutgers School of Engineering Commencement Speaker**, May 2018
- **Rutgers Chancellor's Leadership Award**, May 2018
- **James Leroy Potter Award for Original Investigation**, May 2018
- **Phi Beta Kappa**, Member, April 2018
- **Tau Beta Pi**, Member, December 2016
- **Valedictorian**, West Windsor-Plainsboro High School North, June 2014
- **Eagle Scout**, September 2013