# Keval Doshi

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*Applied Scientist with expertise in video understanding, vision-language models, and content moderation.*

## Education

**University of South Florida, Tampa, FL** *Aug 2017 – May 2022*

- Ph.D. in Electrical Engineering (2018 – 2022), GPA: 4.0
- M.Sc. in Electrical Engineering (2017 – 2018)
- Advisor: Prof. Yasin Yilmaz

## Professional Experience

**Applied Scientist II — Amazon Prime Video, Seattle, WA** *June 2022 – Present*

- Led SUPRA, an automated content moderation strategy, adopted in 11 countries.
- Developed and implemented a vision-language model specifically trained on 1.9M videos for cinema domain.
- Collaborated cross-functionally to reduce operational costs by 34%.

**Video Understanding Intern — Nokia Bell Labs, Murray Hill** *June 2021 – Aug 2021*

- Developed a scene graph-based method to interpret object interactions in videos.
- Designed algorithms suitable for datasets with limited annotations, improving detection accuracy by 17%.

**Data Science Intern — Alstom, Melbourne, FL** *May 2019 – Aug 2019*

- Developed statistical models to accurately determine train locations.
- Improved time-series classification accuracy with a novel weighted DTW algorithm.
- Submitted one patent application and two journal papers.

**Graduate Research Assistant — University of South Florida** *Aug 2017 – May 2022*

- Created modular, interpretable frameworks for video understanding and surveillance.
- Implemented sequential anomaly detection approaches with an emphasis on lowering detection delay.

## Publications

**Selected Publications** (Full list available on Google Scholar):

- K. Doshi et. al., "A multimodal benchmark and improved architecture for zero shot learning", **published**, IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), 2024.
- H. Karim, **K. Doshi** and Y. Yilmaz, Real-time weakly supervised video anomaly detection, **published**, IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), 2024.
- B. Uzkent et. al., "Dynamic inference with grounding based vision and language models", **published**, IEEE Computer Vision and Pattern Recognition (CVPR), 2023.
- K. Doshi and Y. Yilmaz, "Towards Interpretable Video Anomaly Detection", **published**, IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), 2023.
- K. Doshi and Y. Yilmaz, "A Modular and Unified Framework for Detecting and Localizing Video Anomalies", **published**, IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), 2022.
- K. Doshi and Y. Yilmaz, "Rethinking Video Anomaly Detection - A Continual Learning Approach", **published**, IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), 2022.
- K. Doshi and Y. Yilmaz, "Continual Learning for Anomaly Detection in Surveillance Videos", **published**, Computer Vision and Pattern Recognition (CVPR) Workshop on Continual Learning 2020.

- K. Doshi and Y. Yilmaz, "Fast Unsupervised Anomaly Detection in Traffic Videos", **published**, Computer Vision and Pattern Recognition (CVPR) Workshop on AI CITY 2020.
- K. Doshi and Y. Yilmaz, "Online Anomaly Detection in Surveillance Videos with Asymptotic Bounds on False Alarm Rate", **published**, Elsevier Pattern Recognition.
- K. Doshi, Y. Yilmaz and S. Uludag, "Timely Detection and Mitigation of DDoS Attacks via IoT Networks", **published**, IEEE Transactions on Dependable and Secure Computing
- K. Doshi and Y. Yilmaz, "Road Damage Detection using Deep Ensemble Learning", **published**, IEEE International Conference on Big Data 2020.

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## Patents

- Method and system for railway vehicle location (US20220258781A1)
- Online multivariate anomaly detection (U.S. Patent No. 12,174,689, Dec 2024)
- Online Multivariate Anomaly Detection and Localization (Applied)

## Awards and Achievements

- 1st Place, NIST Automated Streams Analysis for Public Safety (2020)
- 1st Place, CVPR Continual Learning Challenge (2021)
- 2nd Place, IEEE Big Data Cup Road Damage Detection (2020)
- 2nd Place, NVIDIA AI CITY Challenge (CVPR 2020)
- "Hack for Good" Award by JP Morgan at Hack-a-bull (2018)
- Best Hardware Hack, InOut hackathon, SVNIT India
- International Chess Rating

## Reviewer Experience

- CVPR (2021-2025), WACV (2020-2024), ECCV/ICCV (2020-2023), IEEE TPAMI, IEEE IoT Journal, IEEE TNNLS, Pattern Recognition Letters.

## Technical Skills

- **Languages:** Python, MATLAB
- **Python Libraries:** Pandas, Matplotlib, NumPy, SciPy
- **Tools:** CUDA, MongoDB, Linux, LaTeX
- **Frameworks:** PyTorch