JOANNE LIN

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PROFILE

I am a PhD Candidate in Computer Science at the University of Bristol, funded by the MyWorld Strength in Places programme. My field of research focuses on segmentation and tracking in low-light conditions, with an expected completion date of September 2027. I hold a First-Class Honours BSc in Computer Science from the University of Bristol. My research interests include computer vision, image/video processing and machine learning.

EDUCATION

PhD Computer Science Sep 2023 - Sep 2027
University of Bristol, Currently studying

BSc Computer Science Sep 2020 - Jun 2023
University of Bristol, Award: First class (with Honours)

PUBLICATIONS

ELVIS: Enhance Low-Light for Video Instance Segmentation in the Dark Jun 2026
IEEE/CVF Conference on Computer Vision and Pattern Recognition *CVPR 2026*

- Introduced a new framework (ELVIS) to improve the performance current state-of-the-art VIS methods on low-light videos.
- Developed a new synthetic low-light video pipeline which estimates several physics-based degradation parameters from real low-light videos to be applied onto normal-light videos.
- Conducted extensive experiments to validate the superiority of our ELVIS framework for VIS tasks in low-light.

Towards a General-Purpose Low-Light Synthetic Pipeline for Images and Videos Oct 2025
ACM Workshop on Multimedia Content Generation and Evaluation: New Methods and Practice *McGE 2025*

- Developed a novel approach to low-light image/video synthesis by estimating the noise degradations in real low-light content and applying it onto normal-light content.
- Employed numerous experiments to evaluate against several noise synthesis methods.

Multi-Scale Denoising in the Feature Space for Low-Light Instance Segmentation Mar 2025
IEEE International Conference on Acoustics, Speech, and Signal Processing *ICASSP 2025*

- Developed a novel weighted non-local block module for integration into standard instance segmentation backbones, enhancing robustness in low-light imaging scenarios.
- Conducted extensive evaluations across multiple instance segmentation architectures.
- Demonstrated superior performance compared to conventional two-stage pipelines (enhance-then-detect).

EXPERIENCE

Machine Learning Engineer Internship - Outfield Technologies, Remote. Jul 2023 - Aug 2023
Associate SAS Programming Internship - MAC Clinical Research, Remote. Jul 2022 - Sep 2022

POSITION OF RESPONSIBILITY

Teaching Assistant, University of Bristol. Oct 2021 - Ongoing
Computer Science Course Representative, University of Bristol. Nov 2020 - Jun 2023

SKILLS

Programming languages: Python, Java, Go, C, C++, Haskell, HTML/CSS/Javascript
Tools and Technologies: PyTorch, Numpy, OpenCV, Pandas, Git/GitHub, CircleCI, AWS

AWARDS

Hele Shaw Award, Bristol PLUS Award