SERISCOPE: A Low Cost Edge-AI System for Fertility and Disease Assessment of Tassar Silkworm Eggs

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Pebrine disease, which is caused by Nosema mylitta, is one of the most harmful threats to the sericulture sector. Traditional diagnosis involves manual microscopic analysis of moth body fluid, which is time-consuming and also liable to human errors. This paper describes a low-price Edge AI diagnosis tool named SeriScope that automatically diagnoses pebrine disease and calculates egg fertility through microscopic image analysis. This tool makes use of five different classification models and has been trained on more than 1400 real-world field dataset examples collected from the tassar grainages across the regions affected by sericulture. Operating fully under an offline environment on embedded hardware platforms, SeriScope can provide fast diagnosis with least infrastructure and thereby assist farmers while supporting rural economic growth aligned with SDG Goals 8 and 9.

Awards Won:
Zydus Pharmaceuticals USA Inc.: Second Place Computational Biology and Bioinformatics