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AI in Aquaculture-agri; Precision Farming; Machine Vision Technology; Object Tracking; User-friendly Graphical Interface

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My research advances precision farming by exploring AI- and machine-vision–based approaches for yield prediction, growth forecasting, and growth optimisation. I employ hyperspectral computational imaging to detect agricultural stress and guide timely remediation. As part of this work, I design experiments and sensors and develop the algorithms that drive these precision agriculture solutions. On aquaculture, as an example, I also seek to automate the evaluation of tilapia fish stress to enhance water quality monitoring, disease prevention, and overall welfare. It revolves around the application of machine vision to accurately assess stress in tilapia fish via swimming speed patterns, recognizing the inefficiency of manual methods with a user-friendly graphical interface.
