Numerical and Experimental Verification of lift from an asymmetric hydrofoil

Type of project: *MSc or BSc*

Project description:
The project aims to identify and characterize the Lifted Weight capability of a Submerged Foil (LWSF) as a function of submergence depth and speed through water. The foil has an adjustable depth from being rotated from a horizontal to a vertical position, which determines the submerged surface area. Propeller thrust and speed through water are also adjustable. Angle of attack and aspect ratio are constant, and the project will identify the ideal wing size for maximum speed before cavitation, and ideal cambered shape on the submerged part of the wings to ensure maximum lifted weight.
The foils are designed to be part of new cargo and passenger vessels, built from filament winded pipes, with propulsion from both wind and thrusters.
The project will involve calculating the LWSF using numerical models and comparing these with experimental results obtained using a fabricated model and prescribed measuring methodology.

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