William Kimball Skelly
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Education

Olin College of Engineering, Needham, MA, Bachelor of Science in Mechanical Engineering Expected Graduation: May 2025

Relevant Coursework: Mechanical Design; Controls; Finite Element Analysis; Design for Manufacture; Mechanics of Solids and Structures; Intro to Mechanical Prototyping; Intro/Intermediate Thermodynamics and Transport Phenomena; Dynamics; Linear Algebra; Multivariable Calculus; Principles of Integrated Engineering

Skills

CAD: Solidworks **FEA:** Solidworks **CAM:** HSM-Works **Fluid Dynamics:** Ansys Fluent CFD; XFLR5
Fabrication: CNC and Manual Mill; Shopbot CNC Router; Composites Fabrication; CNC Plasmacutter; CNC Laser Cutter; FDM 3D Printer; Sandblaster; Thermo-former; Sheet metal fabrication; Manual Lathe; Injection Molding
Code: Python; MATLAB
SCUBA: SSI Certified Rescue Diver and Advanced Open Water including Drysuit -- 100+ dives logged in New England

Projects and Experience

Underwater Glider Research Team – Olin College Fall 2023 – Present
- Founder and team lead for research team developing an autonomous underwater glider
- Coordinate teams working on electrical, software, and mechanical design of underwater glider
- Designed hydrofoil optimized for low Reynolds numbers using XFLR5
- Created 1:1 scale hydrodynamic test model, and conducted experiments to measure lift-to-drag ratio
- Conducted CFD analysis on hydrofoils in Ansys, and compared to experimental data

Mechanical Engineering Intern – Cognex Test Engineering Team Summer 2023
- Lens gripping mechanism: Designed, CADed and FEA analyzed mechanism, then did V&V testing on 3D printed prototypes
- Quoted machined parts through Xometry and Protolabs; ordered machined parts for V&V testing.
- Conducted torque testing on lenses to determine mechanism design spec

Amphibious RC Hovercraft – Principles of Integrated Engineering – Olin College Fall 2022
https://olincollege.github.io/pie-2022-03/hoverbois/
- Mechanical lead for multidisciplinary team designing and building amphibious RC hovercraft
- Collaborated with mechanical, software, and electrical engineers via SCRUM method
- CAD in Solidworks; fabrication on variety of machines including CNC router and laser cutter
- Final vehicle successfully tested on water, snow, ice, pavement, and other surfaces

Ducted Multirotor UAV and Hydrofoil Research – Olin College Robotics Lab Fall 2021 – Spring 2023
- Mechanical design, Solidworks CAD, and CNC and composites fabrication for ducted multirotor UAV platform
- Design stall-delay hydrofoils in Solidworks for use in marine robotics; use Ansys CFD to predict stall angles of hydrofoils

Olin Design Build Fly Fall 2021 – Present
- Aerodynamics mentor – help guide design and aerodynamic analysis of flight surfaces
- Fabricate fiberglass composites for flight surfaces
- Use and teach newer members how to use XFLR5 software to evaluate and improve aerodynamic design

Flying Aces Club 2017 – Present
http://stealthsquadron-fac49.com/
- Winner of over 30 first-place awards at New England regional model airplane competitions for building and flying free-flight scale model planes designed as scale flying replicas, judged for accuracy and flight performance in competition
- Fly under rubber power in low Reynolds number conditions without the aid of remote control
- Built from scratch out of balsa wood and tissue paper using only hand tools
- Published original designs and construction plans multiple times on state-level club website

Wooden Sailboat - Personal Project Summer 2020
- Scratch-built my sixteen-foot, wooden sailboat named *Courage*
- Used tools in my garage to build 2-person sailboat out of pine, marine plywood, and maple with no prior boatbuilding experience
- Sharpie catboat design; modified with kick-up rudder and water-tight hatches in fore and aft flotation tanks
- Reinforced mast with carbon fiber, and reinforced chines and bottom with fiberglass