Jasper Waldman

jslw@princeton.edu
+1 (917)-287-5053

Education

Princeton University, *Princeton, NJ* *Grad. 05/2025*
B.S.E. in Mechanical and Aerospace Engineering, Minor in Visual Art GPA: 3.75/4.00

- **Relevant Coursework**: Differential Equations, Linear Algebra, Optimization, Fluid Dynamics, Aircraft Dynamics, Aircraft Design, Automatic Control Systems, Aerospace Structures, Structure and Properties of Materials, Mechanical Design, Aircraft Design
- **Grants and Awards:** Morgan W. McKinzie '93 Senior Thesis Prize Fund, Fred Fox Class of 1939 Fund, Lawrence P. Wolfen '87 Senior Thesis Award, Sam Hutton Fund for the Arts

Research

A Computational Framework for Hydrofoil Design Applied to the International Moth, Adviser Luigi Martinelli
09/2024-05/2025

- Senior Thesis in Mechanical and Aerospace Engineering, nominated for departmental thesis prizes.
- Developed a computational framework combining multiple geometry, analysis, and optimization tools to semi-automate the design loop and allow for comparison of many candidate foils.
- Set up 6-DOF Static velocity prediction program to perform foil analysis, built a surrogate model with a free-surface capturing Boundary Element Method.
- Performed 2D and 3D hydrodynamic shape optimization with adjoint and complex-step optimization tools.

Computational Methods for Spinnaker Aerodynamics, Adviser Luigi Martinelli *01/2024-05/2024*

- Junior Independent Work in Mechanical and Aerospace Engineering: Used ANSYS Fluent with meshing in Cadence Pointwise, performed steady RANS simulations over 1:15 scale model of an America's Cup Design (AC90). Resolved large-scale flow structures, including the leading edge vortex (LEV).

Other Projects

Aerodynamics Lead | 3D Printed Electric sUAV
03/2025-05/2025

- Led development and design of airfoil sections using two open-source optimization codes, ADFlow and CMPLXFOIL, writing runscripts for multipoint optimization, achieving a 15 drag count decrease at cruising condition.
- Manufactured components using lightweight PLA, achieving a below-expected total airframe weight.

Mechanical Lead | Autonomous Search and Rescue Robot [SaRR] *09/2023-12/2023*

- Led mechanical design and manufacturing for semester-long group design project with 9 person team.
- Successfully completed multiple autonomous runs of SaRR course 1 week prior to final demonstration.
- Completed all project goals, winning design competition, while remaining 33% under budget.

Industry Experience

Alpha+ Racing, *Newport, RI*
Shore Team - Rolex TP52 World Championship *07/2024*

- Performed daily maintenance on race yacht and chase boat, ensuring the team was able to start and finish every race of the regatta, achieving program all-time best result of 4th place.
- Took reconnaissance images of team's and competition's sail setups throughout regatta for analysis by sail trimmers, designers, and coaching team.
- Handled on-water hydration and nutrition, ensured athletes were adequately refueled between each race.

Flux Marine, *Bristol, RI*
Mechanical & Marine Engineering Intern *05/2024 - 08/2024*

- Supported mechanical, powertrain, and industrial design teams by performing CFD studies on closed-loop coolant system and lower unit hydrodynamics, using conjugate heat transfer and volume-of-fluid algorithms.
- Conducted propeller selection testing under direct supervision of CEO, improving boat top speed by 15% while reducing continuous torque requirements by 15%,
- Designed propeller shaft fairing and end cone using CFD, cleaning wake field from lower unit to propeller.

Doyle Sails Newport, *Newport, RI*
Sailmaker *06/2023-08/2023*

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- Produced and finished Grand-Prix upwind sails for Doyle's largest international clients including Deep Blue (Botin 85), Platoon (TP52), and Interlodge (Botin 44, TP52).
- Quality proven in competition, with wins in the Menorca 52 Super Series Royal Cup (Platoon), TP52 World Championship (Platoon) and ClubSwan 50 Nations Trophy (Hatari).

SailGP, *Chicago, IL*
Wing / Rigging Department Intern *06/2022*
- Assembled and maintained rigid wingsails for 9 boat SailGP Fleet, completing event with zero breakdowns.
- Supported tech team with daily craning and mooring operations, increasing operational efficiencies and maximizing sailing team's time on the water.

The Binnacle Yachting Equipment, *Halifax, NS, Canada*
Sales Associate, Rigger *09/2020-05/2021*
- Sourced special order parts from marine vendors, shipping them Canada-wide, creating an additional revenue stream for the business.
- Consulted with rigging clients to design optimal solutions, built systems to precise tolerances with same-day turnaround times.

Skills

- **CFD:** CMPLXFOIL, ADFlow, ANSYS Fluent, PUFFIn, Pointwise, VSPAERO, Paraview
- **CAD:** SOLIDWORKS, PTC Creo, OpenVSP
- **Data Analysis:** Python, MATLAB
- **Sailing:** Sailmaking, Rigging
- **Manufacturing**: CNC Machining, 3D Printing, Laser Cutting
- **Office / Admin**: Microsoft Suite, Adobe Suite, Odoo ERP

Sailing

Primary Positions: Navigator, Headsail Trim, Bow
World Sailing Categorization: Group 1 / Amateur
Nationality: USA & Canada

Storm Racing
Canadian Match Racing and IOD Team. Helm: Peter Wickwire. Current World Match Racing Tour Ranking: 11th
- Chester Race Week 2024: 1st, IOD Fleet, Main Trimmer
- Oakcliff July 2024 Grade 3: 2nd, Swedish Match 40, Bow
- Upcoming: Oakcliff July Grade 3, Oakcliff International [WMRT], Thompson Cup [WMRT], Chester Race Week, IOD World Championship,

North East Keelboat Alliance (NEKA)
Groupe 5 - USA 26 | Figaro 2 Mod | Navigator
- Vineyard Race 2024: 3rd in Class, 5th ORC Overall, Youth Corinthian Trophy
  - Organized 4-person Youth Canadian team, podiuming in first event in the boat.

Peacemaker - USA 52875 | Ker 11.5 | Headsail Trimmer
- ORC World Championships 2024: 6th, Class B
- Safe Harbor Race Weekend 2023 & 2024
- NYYC Queen's Cup 2023

Inception - USA 4921 | Judel/Vroljik HH42 | Headsail Trimmer
- Block Island Race 2024
- Vineyard Race 2023

Princeton University Sailing Team
Keelboat Team Captain: 2022 - 2024
- Founded in summer 2022, trained entirely novice crew to class victory at Intercollegiate Offshore Regatta 2023 and overall victory at Southern Collegiate Offshore Regatta 2024.

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Intercollegiate Coed Dinghy Team: 2021 - 2025

- Led team as skipper for 7 consecutive seasons, training 10+ crew and participating in 28+ regattas while serving on the Undergraduate officer board.