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 <https://scholar.google.com/citations?user=nRtcTL4AAAAJ&hl=en&oi=ao>

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## EDUCATION

January 2019 - Present	<b>Degree:</b>	<b>Ph.D.</b> in Mechanical Engineering
	<b>Location:</b>	The University of Texas at Dallas (UTD) Texas A&M University (TAMU) (Transfer to UTD in Fall 2024) Stevens Institute of Technology (Transfer to TAMU in Fall 2020)
	<b>GPA:</b>	4.00
	<b>Advisor:</b>	Assistant Professor <b>Kianoosh Yousefi</b>
	<b>Dissertation Topic:</b>	Navigating the Turbulent Seas: Unraveling Flow Dynamics in Offshore Structures amidst Wind-Wave Interactions
	<b>Tool:</b>	Experiment, Deep Learning, Home-built codes & OpenFOAM
March 2017 - May 2023	<b>Degree:</b>	<b>M.Sc.</b> in Aerospace Engineering
	<b>Location:</b>	Cairo University, Giza, Egypt
	<b>GPA:</b>	3.90
	<b>Advisors:</b>	Professor <b>Mohamed Madbouli Abdelrahman</b> Professor <b>Amr Gamal Guaily</b>
	<b>Dissertation Title:</b>	Active Flow Control Using a Morphing Bump For A Transonic Flow Over An Airfoil
	<b>Tool:</b>	Home-built FEM MATLAB code & OpenFOAM
September 2011 - June 2016	<b>Degree:</b>	<b>B.Sc.</b> in Aerospace Engineering
	<b>Location:</b>	Cairo University, Giza, Egypt
	<b>GPA:</b>	<b>Distinction Honors</b> , 88.73%
	<b>Advisor:</b>	Professor <b>Mohamed Madbouli Abdelrahman</b>
	<b>Grad. Project Title:</b>	Design a Flying Wing
	<b>Tool:</b>	Home-built FDM MATLAB code, Mathematica, ANSYS, XFLR5, & Wind Tunnel Experiment

### Ph.D. courses

Fluid Dynamics for Ocean & Environmental Engineering.	Intro to Ship Design & Building.
Hydrodynamics of High-Speed Marine Craft.	Turbulence and Turbulent Flows.
Mathematics Methods in Science & Engineering II.	Hydrodynamics.
Numerical Methods in Mechanical Engineering.	Advanced Aerodynamics
Computational Fluid Dynamics-Aerospace Applications.	Turbulence Modeling.
Ocean Experiments & Oceanographic Measurements.	Turbulence Processes.
Nonlinear Hydrodynamic Problems.	Computational Aerodynamics.
Intro to Validation, Verification, & Uncertainty Quantity.	High-Performance CFD.
Deep Learning for Petroleum Engineering Using Python.	Professional Development STEM.

### M.Sc. courses

Finite Element Method in Fluid Mechanics (FEM).	Computational Aerodynamics (FDM).
Technical Writing for Scientific Publications.	Advanced Numerical Analysis.
Experimental Methods in Aerospace Engineering.	Aero Elasticity.
Numerical Methods in Propulsion Systems (FVM).	Selected Topics in Aerodynamics.
Modern Control of Flight Systems (Multi-Variable Control).	

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## RESEARCH EXPERIENCE

August 2024 - Present - UTD	<b>Position:</b>	<b>Graduate Research Assistant</b>
	<b>Locations:</b>	The University of Texas at Dallas
	<b>Lab:</b>	Flow Dynamics and Turbulence Laboratory, <a href="https://labs.utdallas.edu/fdt-lab/">https://labs.utdallas.edu/fdt-lab/</a>
	<b>Advisor:</b>	Assistant Professor <b>Kianoosh Yousefi</b>
	<b>Projects:</b>	Data-Driven Modelling of Airflow over Surface Waves, Surface wind stress model for turbulent flow above ocean surface waves, LES framework for simulating turbulent airflow over surface waves, and Turbulence and Flow Dynamics of Floating Offshore Wind Turbines.

### Contributions

- Developed a Convolution Neural Network model to predict turbulent airflow over propagating waves from basic wave characteristics. **Supporting Funds:** NSF Grant# CBET-2404368.
- Developed a pseudo-spectral LES code designed for turbulent airflow over propagating waves. **Supporting Funds:** NSF Grant# OCE-2319535.
- Assisted in writing grant proposals and their annual reports.  
**Accepted Proposal:** Data-driven modelling of sea-surface drag and turbulent flow over ocean surface waves. CPU/GPU Allocations in:
  1. TACC| Start-Up, Frontera Pathways, 35,500 SUs on Lonestar6, Vista, and Frontera.
  2. ACCESS| 880K SUs on Purdue Anvil and TAMU FASTER.

August 2020 - December 2023 - TAMU	<b>Position:</b>	<b>Graduate Research Assistant</b>
	<b>Locations:</b>	Texas A&M University Stevens Institute of Technology
	<b>Lab:</b>	Fürth Laboratory
January 2019 - July 2020 - Stevens	<b>Advisor:</b>	Assistant Professor <b>Mirjam Fürth</b>
	<b>Projects:</b>	Hydrokinetic Flapping Foil Turbines, Point Wave Energy Converters, Oscillating Cylinder, and Planing High-Speed Crafts.

### Contributions

- Developed a home-built code designed for investigating hydrokinetic energy converters.
- Investigated the Leading-Edge Vortex (LEV) over a flapping foil in swing-arm mode.
- Investigated the impact of varying the foil shape parameters on the LEV and power extraction throughout the flapping cycle in swing-arm mode.
- Developed a deformable Overset mesh technique in OpenFOAM for flexible flapping foils.
- Implemented the PANS turbulent modeling technique in OpenFOAM.
- Proposed a numerical towing tank for planing high-speed craft using a turbulent PANS model.
- Investigated the effect of buoy shape on the power-generation of a point wave energy converter.
- Studied how wave characteristics affect power extraction in a spherical buoy system.
- Assisted in writing grant proposals.

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## RESEARCH SKILLS

<b>Programming Languages:</b>	Fortran, C++, Python, Bash, Matlab, R.
<b>CFD/Flow-Modeling Tools:</b>	OpenFOAM, Fluent ANSYS, OpenFAST, NEMOH.
<b>Design Software:</b>	SolidWorks, AutoCAD.
<b>Machine Learning Frameworks:</b>	TensorFlow, Keras.
<b>Software &amp; Tools:</b>	GitHub, SLURM, Linux HPCFD, LATEX.

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## RESEARCH COLLABORATIONS

September 2024 - Present	<b>Projects:</b>	Dynamic Roughness Modeling
	<b>Advisors:</b>	Assistant Professor <b>Kianoosh Yousefi</b> , UTD Assistant Professor <b>Marco Giometto</b> , Columbia University
	<b>Collaborator:</b>	<b>Rituja Kulkarni</b> , Ph.D. Student at UTD
	<b>Description:</b>	Developing a wall-layer model for wind stress.
July 2024 - May 2025	<b>Project:</b>	Biolistic Drug-Delivery
	<b>Advisors:</b>	Assistant Professor <b>Kianoosh Yousefi</b> , UTD Professor <b>Jeremiah Gassensmith</b> , UTD
	<b>Collaborator:</b>	<b>Thomas S. Howlett</b> , Ph.D. Student at UTD
	<b>Description:</b>	Studied flow dynamics and particle interactions towards porous skin.
March 2023 - May 2024	<b>Project:</b>	Ship Hull Optimization
	<b>Advisors:</b>	Assistant Professor <b>Mirjam Fürth</b> , TAMU Professor <b>Antony Jameson</b> , TAMU Professor <b>Luigi Martinelli</b> , Princeton University
	<b>Description:</b>	Developed codes and investigating related phenomena.
January 2023 - August 2023	<b>Project:</b>	Turbulent PANS Model
	<b>Advisors:</b>	Assistant Professor <b>Mirjam Fürth</b> , TAMU Professor <b>Sharath Girimaji</b> , TAMU
	<b>Description:</b>	Implemented different turbulent PANS models in OpenFOAM and performed validation simulations.
May 2022 - March 2024	<b>Project:</b>	Modified OverSet Mesh in OpenFOAM
	<b>Advisors:</b>	Assistant Professor <b>Mirjam Fürth</b> , TAMU Professor <b>Ludovic Chatellier</b> , Université de Poitiers
	<b>Description:</b>	- Developed a modified OverSet meshing technique to simulate deformable moving bodies, such as flexible flapping foils. - Improving the coupling library between OpenFOAM and PreCICE to perform a Fluid-Solid Interaction (FSI) simulation.

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## RESEARCH MENTORING/CO-ADVISING

July 2024 - Present	<b>Projects:</b>	1) Vertical Axis Wind Turbine - AIAA CLUB 2) Undergrad. RE in ME Course: Flow Dynamics of Biolistic Drug-Delivery
	<b>Students:</b>	Undergraduate Students at Mechanical Eng. Dept., UTD
	<b>Main Advisor:</b>	Assistant Professor <b>Kianoosh Yousefi</b>
September 2021 - May 2025	<b>Project:</b>	Heat Transfer from an Open-Ended Vertical Channel
	<b>Students:</b>	M.Sc. Student at Chemical Eng. Dept., Alexandria Univ. (Remotely)
	<b>Main Advisor:</b>	Assistant Professor <b>Mahmoud Taha Moharam</b>
January 2021 - May 2023	<b>Project:</b>	Point Wave Energy Converters
	<b>Students:</b>	Junior/Senior Students at Ocean Eng. Dept., TAMU.
	<b>Main Advisor:</b>	Assistant Professor <b>Mirjam Fürth</b>
September 2022 - October 2023	<b>Project:</b>	Machine Learning in CFD of Transonic Flow over an Airfoil
	<b>Students:</b>	Senior/M.Sc. Students at Aerospace Eng. Dept., Cairo Univ. (Remotely)
	<b>Main Advisors:</b>	Professor <b>Mohamed Madbouli Abdelrahman</b> DR. <b>Mahmoud Ayyad</b>

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## TEACHING EXPERIENCE

January 2024 - May 2024	<b>Position:</b> <b>Location:</b> <b>Courses:</b>	<b>Lecturer - Course Instructor</b> Texas A&M University OCEN 362 Hydrodynamics (Junior Level)
August 2023 - December 2023	<b>Position:</b> <b>Location:</b> <b>Course:</b> <b>Advisor:</b>	<b>Graduate Teaching Assistant</b> Texas A&M University AERO 689 Computational Aerodynamics (Graduate Level, 15 students) Professor <b>Antony Jameson</b>
January 2023 - May 2023	<b>Course:</b> <b>Advisor:</b>	OCEN 689 Turbulence Modeling (Graduate Level, 12 students) Professor <b>Sharath Girimaji</b>
January 2022 - December 2022	<b>Courses:</b> <b>Advisor:</b>	OCEN 402 Naval Architecture (Senior Level, 55 students) OCEN 362 Hydrodynamics (Junior Level, 52 students) Assistant Professor <b>Mirjam Fürth</b>
May 2019 - August 2019	<b>Position:</b> <b>Location:</b> <b>Course:</b> <b>Advisor:</b>	<b>Teaching Assistant</b> Pre-College Program, Stevens Institute of Technology Civil Engineering, Design, and Architecture A and B (AUTOCAD Program) (High-School Level, 35 students) Teaching Professor <b>Leslie Brunell</b>
May 2018 - September 2018	<b>Position:</b> <b>Location:</b> <b>Courses:</b> <b>Advisors:</b>	<b>Teaching Assistant</b> Egyptian Russian University, Egypt AUTOCAD, and Mathematics II (Freshmen Level, ~45 students) Assistant Professor <b>Ali Mahmoud Al-Sharawy</b> Professor <b>Abdel Baset Ismail</b>
September 2017 - June 2018	<b>Position:</b> <b>Location:</b> <b>Courses:</b> <b>Advisors:</b>	<b>Teaching Assistant</b> Zewail City of Science and Technology , Egypt CFD, Low-Speed Aerodynamics, Aircraft Conceptual Design, Introduction to Astronautics, Orbital and Space Flight Mechanics, Wind Energy: FAST Program, and Engineering Production. (Multi-Levels, ~20-30 students) Assistant Professor <b>Ahmed Eltaweel</b> Associate Professor <b>Mostafa Abdallah</b>

### Contributions

- Delivered lectures, held office hours, and prepared projects, quizzes, and exams.
- Evaluated student deliverables and provided in-depth feedback.
- Used the web-based learning management system (Canvas) to organize course materials, announcements, and grades.

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## INDUSTRY EXPERIENCE

May 2022 - August 2022	<b>Position:</b> <b>Company:</b> <b>Location:</b> <b>Contribution:</b>	<b>Research &amp; Development Engineering Intern</b> Front Energies, LLC Houston, TX Integrated the mooring solver (MoorDyM) with OpenFOAM by building a new linking library in OpenFOAM Conducted validating simulations for the moored floater of a FOWT
July 2016 - October 2018	<b>Position:</b> <b>Company:</b> <b>Location:</b> <b>Contribution:</b>	<b>Research &amp; Development Mechanical Engineer (SOLIDWORKS)</b> Instant Green Energy Cairo, Egypt Worked in the field of energy-generating machines (magnetic motors)

## SERVICE

- September 2021 - June 2023** • Senator for Ocean Engineering Department at Graduate and Professional Students Governments at Texas A&M University.
  - March 2022 - August 2023** • Recruitment and outreach officer of the Aggie Pregnant and Parenting Student Organization at Texas A&M University.
  - July 2022, October 2022, June 2023/2025 & June 2023** • Reviewer in
    - SNAME Maritime Convention (SMC) 2022,
    - 4th Novel Intelligent and Leading Emerging Sciences (NILES) conference 2022,
    - International Mechanical Engineering Congress & Exposition (IMECE) 2023, and
    - American Institute of Aeronautics and Astronautics (AIAA) SciTech conference 2024.
  - May 2021 - December 2022** • Presenter for Ocean Engineering Department, Texas A&M University - College Station at Graduate Engineering Student Advisory Council.
  - January 2022 & September 2022** • Moderating Session Chair at AIAA Science and Technology Forum and Exposition (AIAA SciTech) and SNAME Maritime Convention (SMC).
  - March 2022 - June 2022** • Tutor for a computational fluid dynamics course of 'Introduction to OpenFOAM' at Egypt Scholars.
  - Spring 2020** • Tutor for academic writing sessions about 'Latex' at Stevens Institute of Technology.
  - December 2018** • Academic Judge at The 7th Undergraduate Research Forum, Nile University.
  - July 2015** • Represented Space System Technology Lab. at the 3rd UNISEC GLOBAL Meeting, Japan.
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## SCHOLARSHIPS/AWARDS

- Spring 2025** • University of Colorado Boulder. NAIRR Pilot Travel Award to the AI Unlocked: Empowering Higher Education Through Research and Discovery workshop.
  - Fall 2024** • American Physical Society (APS), Graduate Research Excellence Travel Award.
  - Fall 2023 & Fall 2021** • America Bureau of Shipping (ABS) Scholar, TAMU, ABS Scholarship for academic and research excellence.
  - Spring 2023** • TAMU, Lawrence F. Guseman Award for outstanding contributions to the success and prosperity of the GPSG and the Graduate and Professional Student Body.
  - Fall 2022** • Fluids Engineering Division Summer Meeting - American Society of Mechanical Engineers, Who's Who Video Competition Award, 2nd place.
  - Summer 2022** • Society of Naval Architects and Marine Engineers, Graduate Student Paper & Poster Awards.
  - Summer 2022** • Fluids Engineering Division Summer Meeting - American Society of Mechanical Engineers, Karman Ghia Graduate Student Scholarship.
  - Spring 2022** • Office of Graduate and Professional Studies, TAMU, The Center for the Integration of Research, Teaching, and Learning (CIRTL) Associate Award. Course completed with distinction: An Introduction to Evidence-Based Undergraduate STEM Teaching.
  - Spring 2022** • Graduate and Professional Student Government, TAMU, Travel Award.
  - Spring 2022** • Student Research Week, TAMU, Texas Sea Grant Special Award for research excellence in Wave Energy Converters.
  - 2020, 2023** • Ocean Engineering Department, TAMU, Department Scholarship.
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## OTHER CERTIFICATES

- 2016** • Participation certificate from International Space Apps Challenge, Zewail City.
  - 2015** • Participation certificate from Open Code for Sustainable Development Camp on the occasion of the Social Good Summit, AUC.
  - 2015** • Participation and 3rd place certificates, at Scientific Poster Competition from 2nd Annual Undergraduate Scientific Conference, Zewail City.
  - 2015** • Innovation reward about attitude control during the acceleration phase, at Project Dragonfly Design Competition from The Initiative For Interstellar Studies, London.
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## JOURNAL PUBLICATIONS

1. **Ahmed A. Hamada**, Lubna Margha, Mohamed M. AbdelRahman, Amr Guaily, 2025, *Dynamic Shock Waves Control for an Unsteady Supersonic Flow with a Morphing Bump over a Flat Plate*, Shock Waves Journal, 1-19.
2. Karim Ahmed\*, **Ahmed A. Hamada**\*, Ludovic Chatellier, Mirjam Fürth, 2024, *A Modified Overset Method in OpenFOAM for Simultaneous Motion and Deformation: A Case Study of a Flexible Flapping Foil*, OpenFOAM® Journal, 4, 41–61.  
\*Contributed Equally as first authors.
3. Lubna Margha, **Ahmed A. Hamada**, Ahmed T. Eltaweel, 2023, *Dynamic Transition of Unsteady Supersonic Flow From Mach to Regular Reflection Over a Moving Wedge*, Journal of Fluids Engineering, ASME, 1-45.
4. **Ahmed A. Hamada**, Mirjam Fürth, 2023, *Modelling and Analysis of the Leading-Edge Vortex on Flapping-Foil Turbines in Swing-Arm Mode*, Journal of Fluids Engineering, ASME, 1-14.
5. Yijun Sun, **Ahmed A. Hamada**, Omar Sallam, Björn Windén, Mirjam Fürth, 2023, *The application of laminar numerical wave tank for a heaving buoy hydrodynamics study in low-turbulence nonlinear waves*, Journal of Engineering for the Maritime Environment, JEME-22-0117.
6. **Ahmed A. Hamada**, Abdelrahman A. Sultan, Mohamed M. Abdelrahman, 2018, *Design, Build and Fly a Flying Wing*, Athens Journal of Technology and Engineering, Greece, vol. 3, No. 5.

### Pre-Print:

7. **Ahmed A. Hamada**, Mirjam Fürth, 2022, *Numerical investigation of the energy harvesting capabilities of NACA series flapping foil turbines in swing-arm mode*, Elsevier pre-print, Available at SSRN: <http://dx.doi.org/10.2139/ssrn.4153303>.

### In-Press:

8. **Ahmed A. Hamada**, Mirjam Fürth, In-Press, *Numerical Simulation of the Effect of Buoy Geometries on PTO of Wave Energy Converters*, SNAME 2021 Transactions.
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## CONFERENCE PUBLICATIONS

1. Emily J. Mills, Avram C. Bingham, Aaron Barthwal, Jordyn Raj, Olivia Johnson, Thomas Cruz, and **Ahmed A. Hamada**, March 2025, *Numerical Investigation of Flow Dynamics around a Vertical-Axis Wind Turbine's Airfoil*, AIAA Region IV Student Conference.
2. Heba A. Alaaeldin, **Ahmed A. Hamada**, Mohamed A. El-Naggar, Elsayed Z. El-Ashtoukhy, Mahmoud M. Taha, October 2024, *Numerical Investigation of Natural Convection Dynamics in Open-Ended Vertical Channels with Different Aspect Ratios*, The 6th Novel Intelligent and Leading Emerging Sciences (NILES) Conference, Published in IEEE Xplore.
3. Tarek Ayman, Mayar A. Elrefaie, Eman Sayed, Mohammed Elrefaie, Mahmoud Ayyad, **Ahmed A. Hamada**, Mohamed M. Abdelrahman, October 2023, *Deep Learning-Based Prediction of Aerodynamic Performance for Airfoils in Transonic Regime*, The 5th Novel Intelligent and Leading Emerging Sciences (NILES) Conference, Published in IEEE Xplore.
4. **Ahmed A. Hamada**, Lubna Margha, Ahmed K. Alnemr, Mohamed M. Abdelrahman, Amr Guaily, January 2023, *Unsteady Supersonic Flow over a 2-D Morphing Shock Control Bump Using Different Velocity Profiles*, AIAA SciTech 2023 conference.
5. Lubna Margha, **Ahmed A. Hamada**, Ahmed Eltaweel, January 2023, *RR to MR Over a Moving Wedge at A High Supersonic Flow*, AIAA SciTech 2023 conference.
6. **Ahmed A. Hamada**, Mirjam Fürth, August 2022, *Development of a Finite Element Solver Including a Level-Set Method for Modeling Hydrokinetic Turbines*, American Society of Mechanical Engineers (ASME), Fluids Engineering Division Summer Meeting 2022 conference.

7. **Ahmed A. Hamada**, Lubna Margha, Mohamed M. AbdelRahman, Amr Guaily, August 2022, *Shock System Dynamics of a Morphing Bump Over a Flat Plate*, American Society of Mechanical Engineers (ASME), Fluids Engineering Division Summer Meeting 2022 conference.
8. Lubna Margha, **Ahmed A. Hamada**, Ahmed Eltaweel, August 2022, *Dynamic Transition From Mach to Regular Reflection Over a Moving Wedge*, American Society of Mechanical Engineers (ASME), Fluids Engineering Division Summer Meeting 2022 conference.
9. Lubna Margha, **Ahmed A. Hamada**, Othman Ahmed, Ahmed Eltaweel, August 2022, *Numerical Investigation of a Rotating Double Compression Ramp Intake*, American Society of Mechanical Engineers (ASME), Fluids Engineering Division Summer Meeting 2022 conference.
10. **Ahmed A. Hamada**, Abigail Rolen, William McCullough, Mirjam Fürth, February 2022, *Numerical Simulation of the effect of wave characteristics on PTO of Point Absorber Wave Energy Converter*, 27th SNAME Offshore Symposium, Texas Section of the Society of Naval Architects and Marine Engineers (SNAME).
11. Ahmed Aboelezz, Abdulrahman Yousef, **Ahmed A. Hamada**, and Mostafa Hassanalian, January 2022, *Ducted Fan Experimental Investigation and Shape Optimization Using Computational Fluid Dynamics.*, American Institute of Aeronautics and Astronautics, AIAA SciTech 2022 Forum, CA.
12. **Ahmed A. Hamada**, Mirjam Fürth, October 2021, *Numerical Simulation of the Effect of Buoy Geometries on PTO of Wave Energy Converters*, Society of Naval Architects and Marine Engineers (SNAME), SNAME Maritime Convention 2021, Providence RI.
13. Yusuf T. Elbadry, **Ahmed A. Hamada**, Mohammed A. Boraey, Mohamed M. AbdelRahman, September 2021, *Lid-Driven Cavity Flow with Elliptic Obstacle at Different Orientations*, The 3rd Novel Intelligent and Leading Emerging Sciences (NILES) Conference, Published in IEEE Xplore.
14. Lubna Margha, **Ahmed A. Hamada**, Doyle D. Knight, Ahmed Eltaweel, November 2021, *Dynamic Transition From Regular to Mach Reflection Over a Moving Wedge*, Proceedings of the ASME 2021 40th International, International Mechanical Engineering Congress and Exposition (IMECE2021), American Society of Mechanical Engineers.
15. **Ahmed A. Hamada**, Mirjam Fürth, June 2021, *Ground Effect on Current Energy Harvesting from a Freely-Oscillating Circular Cylinder at Low Reynolds Number*, Proceedings of the ASME 2021 40th International, Conference on Ocean, Offshore and Arctic Engineering, American Society of Mechanical Engineers.
16. **Ahmed A. Hamada**, Omar Khaled Sallam, Colton R. Bonnaure, Patricia Itzel Rodriguez, Jack Stason, Mirjam Fürth, April 2021, *Design of a Free Running High-Speed Craft Model for Testing off the Coast of Galveston*, Proceedings of the 26th Offshore Symposium, Texas Section of the Society of Naval Architects and Marine Engineers (SNAME).
17. **Ahmed A. Hamada**, Mahmoud M. Ayyad, Amr G. Guaily, January 2020, *Variants of the Finite Element Method for the Parabolic Heat Equation: Comparative Numerical Study*, Recent Advances in Engineering Mathematics and Physics, Springer International Publishing.

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## PRESENTATIONS

1. **Ahmed A. Hamada**, Kianoosh Yousefi, May 2025, *Turbulent flow structure over ocean waves: A data-driven approach*, First Comet Computing Conference, Richardson, TX.
2. Kianoosh Yousefi, **Ahmed A. Hamada**, Ali Bizhanpour, Aritra Rayhan, Gurpreet Hora, Hongshuo Yang, Marco Giometto, Fabrice Veron, May 2025, *Data-Driven Modeling of Turbulent Flow Above the Ocean Waves*, Waves in the Sea Environment, Seattle, WA.
3. **Ahmed A. Hamada**, Gurpreet Singh Hora, Fabrice Veron, Kianoosh Yousefi, November 2024, *CNN-Based Reconstruction of Near-Surface Atmospheric Turbulence Using Surface Wave Measurements*, Bulletin of the American Physical Society, Salt Lake, UT.

4. **Ahmed A. Hamada**, Thomas Howlett, Jeremiah Gassensmith, Kianoosh Yousefi, November 2024, *Flow Dynamics of Biolistic Drug-Delivery and Therapeutic Microparticles*, Bulletin of the American Physical Society, Salt Lake, UT.
  5. Lubna Margha, **Ahmed A. Hamada**, Ahmed Eltaweel, November 2023, *Dynamic Shock Waves Transitions in Unsteady Supersonic Flows*, Bulletin of the American Physical Society, Washington DC.
  6. **Ahmed A. Hamada**, Mirjam Fürth, September 2023, *A Modified Overset Method in OpenFOAM for Simultaneous Motion and Deformation: A Case Study of a Flexible Flapping Foil Hydrokinetic Turbine*, Texas A&M Conference on Energy, Texas A&M Energy Research Society, TAMU, College Station, TX.
  7. **Ahmed A. Hamada**, Lubna Margh, Sharath Girimaji, Mirjam Fürth, July 2023, *Implementation of Partially Averaged Navier-Stokes Turbulent Closure Models in OpenFOAM*, 18th OpenFOAM Workshop, Genova, Italy.
  8. Karim Ahmed, **Ahmed A. Hamada**, Ludovic Chatellier, Mirjam Fürth, July 2023, *A Novel Overset Method in OpenFOAM for simultaneous motion and deformation*, 18th OpenFOAM Workshop, Genova, Italy.
  9. **Ahmed A. Hamada**, Karim Ahmed, Ludovic Chatellier, Mirjam Fürth, April 2023, *Overset in OpenFOAM: Improvements for Combined Motion And Deformation Simulations*, 22nd Computational Fluid Conference, Cannes, France.
  10. **Ahmed A. Hamada**, Xinguo Wang, Mirjam Fürth, March 2023, *High-fidelity CFD simulations of a high-speed craft for towing tank tests in calm water*, 28th SNAME Offshore Symposium, Texas Section of the Society of Naval Architects and Marine Engineers (SNAME), Houston, TX.
  11. **Ahmed A. Hamada**, Mirjam Fürth, March 2023, *Improved Ocean Current Energy Harvesting through the Numerical Modeling of Flapping-Foil Hydrokinetic Turbines*, Texas A&M Student Research Week, TAMU, College Station, TX.
  12. **Ahmed A. Hamada**, Mirjam Fürth, September 2022, *Numerical investigation of the energy harvesting capabilities of NACA series flapping foil turbines in swing-arm mode*, Texas A&M Conference on Energy, Texas A&M Energy Research Society, TAMU, College Station, TX.
  13. **Ahmed A. Hamada**, Mirjam Fürth, March 2022, *Improved Ocean Wave Energy Harvesting through High Fidelity Numerical Modeling Coupled with Wave Tank Experiments*, Texas A&M Student Research Week, TAMU, College Station, TX.
  14. **Ahmed A. Hamada**, Mirjam Fürth, December 2021, *Review on Wave Energy Converters*, Ocean Engineering Department Meetings, TAMU, College Station, TX.
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## TECHNICAL REPORTS

1. **Ahmed A. Hamada**, September 2022, *How to build a high-quality mesh using block-Mesh in OpenFOAM*, Texas A&M University, Department of Ocean Engineering, CFD community, Report No.: OCEN CFD Technical Report #220004. <https://ocean-cfd.engr.tamu.edu/doc/foilmesh/>
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