Rami Masri

Ph.D. Candidate,
Computational and Applied Mathematics
Rice University,
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EDUCATION

Rice University, Houston, TX
Ph.D., Computational and Applied Mathematics, May 2022 (expected)
Advisor: Prof. Beatrice Riviere

Rice University, Houston, TX
M.A., Computational and Applied Mathematics, May 2019
Advisor: Prof. Beatrice Riviere
Thesis: Derivation and Numerical Simulation of Oxygen Transport in Blood Vessels.

Lebanese American University, Beirut, Lebanon
B.S., Mathematics, with high distinction, May 2017.

RESEARCH

Rice University, Department of Computational and Applied Mathematics
Numerical analysis of discontinuous Galerkin methods for the incompressible Navier–Stokes equations.
Numerical analysis of discontinuous Galerkin methods for nonlinear convection diffusion equations.
Modeling and simulation of blood flow and solute transport in vessel networks.
2018-present
Advised by: Prof. Beatrice Riviere

TEACHING

Rice University, Department of Computational and Applied Mathematics
Teaching Assistant, CAAM 336: Differential equations in science and engineering, Fall 2021; Fall 2019 - Spring 2020
Grader, CAAM 336, Fall 2017 - Spring 2018, Fall 2020 - Spring 2021.
Grader, CAAM 453: Numerical Analysis 1, Fall 2018

Lebanese American University, Department of Computer Science and Mathematics
Teaching Assistant, Introductory calculus courses, Fall 2016 - Spring 2017

PAPERS

R. Masri, C. Liu, B. Riviere. A discontinuous Galerkin pressure correction scheme for the incompressible Navier-Stokes equations: stability and convergence. *Submitted*, 2021.

R. Masri, C. Puelz, B. Riviere. A discontinuous Galerkin method for blood flow and solute transport in one dimensional vessel networks. *Communications on Applied Mathematics and Computation*, 2021.

R. Masri, C. Puelz, B.Riviere. A reduced model for solute transport in compliant blood vessels with arbitrary axial velocity profile. *International Journal of Heat and Mass Transfer*, 2019.

R. Masri. Derivation and numerical simulation of oxygen transport in blood vessels. *Thesis for degree of Master of Arts, Rice University*, 2019.

TALKS

One dimensional models of solute transport and blood flow: derivation and numerical simulation. *SIAM Conference on Computational Science and Engineering*, March 2021.

Derivation and simulation of blood flow and solute transport models in one dimensional vessel networks. *SIAM Texas Louisiana Annual Meeting*, October 2020.

Derivation and simulation of a reduced solute transport model in compliant blood vessels with a general velocity field. *Accepted in SIAM Life Sciences*, June 2020. Cancelled due to Covid.

Discontinuous Galerkin methods for blood flow and solute transport models. *Finite Element Rodeo at Baylor University*, March 2020.

Reduced models of blood flow and solute transport. *Departmental Graduate Student Seminar at Rice University*, January 2020.

AWARDS

Student Travel Award: SIAM CSE, 2021.

Alan Weiser Memorial Travel Award, Rice University, 2020.

Fulbright Winner, U.S. Embassy in Beirut, 2017.

Full Merit Scholarship, Lebanese American University, 2015-2017.

National Public Speaking Contest Winner, English Speaking Union, 2016.

COMPUTER SKILLS

Languages: Python, C, C++.
Software: MATLAB, LaTeX, FEniCS.

MEMBERSHIPS SIAM

LANGUAGES English, Arabic