

CHAYANON (NAMO) WICHITRNITHED

namo@utexas.edu — (559) 545-2025

github.com/namo626

EDUCATION

The University of Texas at Austin - Oden Institute for Computational Engineering and Sciences 2020 - Present

Ph.D. Computational Science, Engineering, and Mathematics

GPA: 3.9/4.0

- Research areas: Simulation of coastal flooding, Numerical methods for shallow water flows
- Relevant coursework: High-Performance Computing, Stabilized Methods for CFD, Numerical Analysis, Fluid Dynamics, Conservation Laws, Applied Analysis

Georgia Institute of Technology

August 2016 - May 2020

B.S. Physics with Highest Honors, with minor in Scientific & Engineering Computing

GPA: 3.94/4.00

- Relevant coursework: Intro to HPC, Classical & Quantum Mechanics, Scientific Programming, Discrete Algorithms, Object-Oriented Programming, Electromagnetism

EXPERIENCE

Graduate Research Assistant — Austin, TX

May 2021 - Present

Computational Hydraulics Group, Oden Institute

- Implement and test parametric rainfall models on a discontinuous Galerkin variant of the Advanced Circulation (ADCIRC) 2D finite element model to better capture the interaction of various flooding sources in compound floods
- Developing a coupled continuous/discontinuous Galerkin finite element method based on ADCIRC to improve simulation of advection-dominated flows while maintaining efficiency
- Partner with the Texas Water Development Board to determine worst-case scenario flood levels by running ADCIRC simulations on the Texas Advanced Computing Center (TACC) clusters for historical storms with extreme levels of surge or river discharge
- Prepared and validated compact finite element meshes of the Gulf of Mexico using OceanMesh2D and QGIS for use in multiple projects (including the ones above)
- Ported source code of the River Analysis System (HEC-RAS) from Windows to Linux using CMake as part of a code parallelization project with the US Army Corps of Engineers

Undergraduate Research Assistant — Atlanta, GA

2017 - 2020

Pattern Formation and Control Laboratory, Georgia Tech

- Generated numerical simulations of quasi-2D turbulent flows and their visualizations in MATLAB
- Performed particle image velocimetry (PIV) to compare experimental data with simulation
- Optimized and tested regression techniques for estimating physical parameters of noisy quasi-2D flows
- Implemented and tuned recurrent neural networks (RNNs) to predict chaotic trajectories of dynamical systems

TECHNICAL SKILLS

- **Programming:** C/C++, Fortran (with MPI, OpenMP, PETSc), Python, MATLAB, Mathematica, Bash, HTML
- **Tools:** GNU/Linux, Git, GNU Make, CMake, LaTeX, QGIS, Tracker
- **Research:** Advanced Circulation model (ADCIRC), Figuregen, OceanMesh2D, FEniCS

CONFERENCE PRESENTATIONS

- *Developing a Compound Flood Model using the Discontinuous Galerkin Method.* Planet Texas 2050 Conference. The University of Texas at Austin, Austin, TX, April 2022.
- *The Impact of Boundary Conditions on Spectral Condensation of Turbulence: Numerics and Experiment.* 71st Annual Meeting of the APS Division of Fluid Dynamics. Georgia World Congress Center, Atlanta, GA, November 2018.

HONORS & AWARDS

- National Initiative for Modeling and Simulation (NIMS) Graduate Fellowship, 2020 - Present
- Runners Up - Planet Texas 2050 Symposium Student Poster Competition, April 2022
- Faculty Honors, Fall 2016 - Spring 2018