Emmett Padway

(917) 628-8946 • epadway@uwyo.edu
1107 Palmer Drive
Laramie, WY, 82072

EDUCATION

University of Wyoming – Department of Mechanical Engineering, Laramie, Wyoming 2015 – 2020E
PhD Candidate, Focus on Computational Fluid Dynamics, GPA: 3.91/4.00

McGill University – Faculty of Engineering, Montreal, Canada 2010 – Dec 2014
Bachelor of Engineering, Major in Mechanical Engineering, Concentration in Aeronautical Engineering.

WORK/RESEARCH EXPERIENCE

High Altitude CFD Lab, Laramie, Wyoming August 2015-Present
Graduate Research Assistant (Supervised by Professor Dimitri Mavriplis)
- Wrote 2D finite volume euler code (explicit and implicit solution methods) including adjoint to obtain gradients
- Developed and implemented pseudo-time accurate approach to computing the adjoint and tangent systems
- Developed 2D AMR package and adjoint based error-estimation
- Added CST shape parameterization to NSU2D and NSU3D

NASA Ames Research Center, Mountian View, California Summer 2017 & 2018
Summer Research Assistant (Supervised by Michael Aftosmis)
- Implemented and investigated solution averaging and reduced order models in Cart3D
- Showed averaging of states in limit cycle oscillations aids in convergence of adjoint systems of partially converged flows
- Showed that low energy POD methods did not aid in investigated scenarios

McGill Computational Aerodynamics Group, Montreal, Canada May 2014-December 2014
Research Assistant (Supervised by Professor Siva Nadarajah)
- Worked on revising/changing lab optimization framework
- Tested robustness and functionality of new framework (DAKOTA) with varying solvers
- Tested accuracy and convergence of solution to benchmark test cases

Carbofix Ltd. (Biomedical Implant Company), Herzliya, Israel Summer 2013
Summer Engineering Intern
- Worked with the design team developing/enhancing implant devices
- Assisted in testing processes for material properties and regulatory compliance
- Prototyped and modeled production parts using lathe and CNC machine

LEADERSHIP AND EXTRACURRICULAR

DECA McGill (Case Competition Club), Montreal, Canada 2013 - 2014
Executive Vice-President
- Supervisor of four vice-presidents for Delegate Development
- Planning a multi-university case competition
- Collaborating with the other executive vice-presidents and the president to run the club

Vice-President of Delegate Development 2012 - 2013
- Organized and ran trainings
- Assisted with recruitment

AWARDS

University of Wyoming, Castagne Fellowship
- Merit award for high performing graduate students

NASA, NASA Graduate Aeronautics Scholarship
- Competitive award for high performing graduate students
- 2 year fellowship including increased funding for CBRE with NASA technical mentor.

PAPERS

- "Toward a Pseudo-Time Accurate Formulation of the Adjoint and Tangent Systems", E. Padway and D. Mavriplis AIAA Paper 2019-0699, 57th AIAA Aerospace Sciences Meeting, San Diego CA, January 2019.

COMPUTER SKILLS

Computer Skills: Fortran, MATLAB, C, C++ (basic), python (basic)
Operating Systems: Linux, OSX, Windows
Mathematical Software Packages: BLAS, LAPACK, Intel MKL, PETSC, Trilinos
Parallel Programming: OpenMP (intermediate), MPI (basic)
Software Development Tools: SVN, Git, TotalView
CFD: NSU2D, NSU3D, Cart3D
Visualization: Tecplot, Paraview, Xmgrace
Optimization: Dakota, Snopt
CAD/CAE: Abaqus FEA, Solidworks

OTHER SKILLS AND INTERESTS

Language Skills: Fluent English and Hebrew, basic Spanish
Interests: Martial Arts, Running, Climbing, Hiking, Basketball, Football, Chess