GIANLUCA PULITI

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EDUCATION

August 2006 to Present

University of Notre Dame – Notre Dame, Indiana

- *Master of Science* – Mechanical Engineering – GPA 3.97/4.00 – Received May 2010
- *Philosophiae Doctor* – Aerospace and Mechanical Engineering – Expected Summer 2012

August 2001 to May 2006

Embry-Riddle Aeronautical University (ERAU) – Daytona Beach, Florida

- *Bachelor of Science*, Aerospace Engineering – GPA 3.93/4.00
- *Bachelor of Science*, Engineering Physics (with Minor in Mathematics) – GPA 3.93/4.00

EXPERIENCE

August 2006 to Present

Research Assistant – **University of Notre Dame** – Notre Dame, Indiana

- Modeled the thermodynamic and transport properties of nanofluids, fine dispersions of nano-sized solid particles in a liquid
- Authored two papers on the properties of nanofluids in the Journal of Nanoparticle Research and in the Applied Mechanics Reviews; additional papers are in preparation
- Researched, under a grant from the United States Department of Energy, the feasibility of using ionic liquids with a suspension of nanoparticles in an absorption refrigeration cycle, and for CO_2 capture applications
- Presented 14 conference papers at professional conferences in the United States and abroad; invited to give a talk on nanofluids at an international AIAA Aerospace Science Meeting
- Invited to give three lectures on molecular modeling methods to a graduate engineering class
- Assisted professors for evaluations and curriculum development in numerous engineering classes
- Focused graduate coursework on fluid dynamics, heat transfer, and numerical methods

Summer 2003 and Summer 2005

Summer Intern – **University of Notre Dame** – Notre Dame, Indiana

- Designed and implemented an educational simulation tool using Simulink to allow undergraduates to have a visual understanding of the physics behind a refrigeration thermodynamic cycle
- Researched and implemented a model to provide some basic understanding of the dynamics of combustion, through a simplified mathematical representation of the complicated reaction processes

August 2001 to May 2006

Student – **Embry-Riddle Aeronautical University** – Daytona Beach, Florida

- Led the aerodynamics and aircraft stability team during the senior design project conducted for Gulfstream under a non-disclosure agreement. Worked on the design of the variable sweep wings for the Gulfstream Quiet Supersonic Jet
- Competed at the Revolutionary Aerospace System Concept Academic Linkage (RASC-AL) contest, organized by NASA and the National Institute of Aerospace, by participating in the design of a vehicle and mission to Saturn's moon, Enceladus. Led the design of the thermal control subsystem, and of electrodynamics and momentum exchange tether
- Designed the wings of a micro air vehicle, and analyzed their aerodynamics, stability, and control
- Derived a perturbative solution for a massive, static, spherically-symmetric scalar field in general relativity, Einstein-Klein-Gordon equations; presented work at an international APS conference
- Invited to give a lecture on general relativity to over 1,000 Italian high school students and professors
- Undergraduate coursework focused on aerodynamics, aircraft stability and control, and system engineering

SELECTED AWARDS AND HONORS

- **Center of Applied Mathematics Graduate Fellowship**, University of Notre Dame, Academic Year 2009-10
- Winner of the **2008 AIAA Foundation Graduate Award**, awarded yearly to 4 students worldwide
- **Outstanding Academic Achievement and Leadership Award,** awarded yearly to one student – Student Activities, ERAU, Spring 2005
- **Rosa d'Oro** for outstanding achievements, August 2001, Roseto degli Abruzzi, Italy
- **Honor Societies:** Sigma Gamma Tau (Aerospace Engineering), Sigma Pi Sigma (Physics), Tau Beta Pi (Engineering – Co-founded the ERAU Chapter), Omicron Delta Kappa (Leadership)
- **Selected Memberships:** American Society of Mechanical Engineers (ASME), American Institute of Aeronautics and Astronautics (AIAA), American Physical Society (APS), Society for Industrial and Applied Mathematics (SIAM)

RELEVANT SKILLS

- **Languages**: fluent in Italian and English and working knowledge of written Spanish and French
- **Selected Software**: AutoCAD, Pro-E, CATIA, NASTRAN, Comsol, Adobe CS Suite, Microsoft Office, Win/Linux
- **Programming***:* C/C++, IDL, MFIX, OpenMD, LaTeX, Maple, Matlab, Simulink, Mathematica, FORTRAN 77/90