PERSONAL INFORMATION

Matthew Stephen Piana

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Sex Male | Date of Birth 21/08/1993 | Nationality USA

EDUCATION

Oct. 2017- Nov. 2020

Master of Science Renewable Energy Systems

Technische Universität Berlin, Berlin, Germany (Degree Program in German)

- GPA: 2,4
- Courses: Renewable Energy Technology in Electrical Networks, Energy Technology II, Energy Storage Technologies for Mobile Applications, Solar Panel Project Course, Photovoltaics II: Thin Film Solar Cells, Photovoltaics I: Fundamentals, Wind Turbines II: Project Course, Wind Turbines I: Fundamentals, Renewable Energy Integration in Electrical Networks, New Developments in Energy Markets, Energy Systems, Le Français Pour les Sciences et les Techniques, Environmental Management

Sep. 2012- May 2017

Bachelor of Science Mechanical Engineering

Northeastern University, Boston MA, USA

- GPA: 3.4/4
- Courses: Heat Transfer, Thermodynamics, Electrical Engineering, Material Science, Dynamics and Vibrations, Measurement and Analysis with a Thermal Science Application, System Analysis and Controls, Mechanical Engineering Design

WORK EXPERIENCE

Nov. 2019 - Nov. 2020

Student Employee TU Berlin (Faculty III Energy Systems)

- Worked in team to organize a citizen's forum on CO2-taxes in Germany
- Aided with the development of website Artwork Earth, which depicts artworks related to topics of climate change and renewable energy
- Co-taught course for freshman on the future of energy systems

Oct. 2018 - July 2019

Student Employee TU Berlin (Faculty V Exp. Fluid Mechanics)

- Co-taught master's course on aerodynamic simulation of wind turbines
- Designed both written and software exercises for students to learn the wind turbine simulation software QBlade as well fundamental wind turbine theory
- Built 2 m diameter Hugh Piggott wind turbine in team for aerodynamic testing
- Aided in retrofitting the existing test stand for the testing of the Piggot turbine
- Conducted aerodynamic experiments on Piggot turbine in TU Berlin wind tunnel

Sep. - Dec. 2016

Mechanical Design Co-op

Niles Simmons Hegenscheidt GmbH, Erkelenz, Germany

- Designed 3D models in SolidWorks and generated engineering drawings for manufacturing
- Consulted engineers and assembly workers to make necessary changes to technical drawings
- Measured machines on manufacturing floor with precision and accuracy in order to design fixtures
- Chose suitable ISO parts to design cost-effective fixtures

Mechanical Design Co-op

Aug. - Dec. 2015 — Weir Valves and Controls USA, Ipswich MA, USA

- Co-led poppet redesign project to improve production efficiency, first time yield, and profit
- Collaborated with engineers, welders, and machinists to more deeply understand design challenges in order to effectively redesign poppets
- Created 3D SolidWorks models and accompanying 2D technical drawings for production
- Conducted FEA analyses to verify deformation limits on sealing surfaces of valves
- Utilized CFD simulations in SolidWorks to compare different customer valve scenarios
- Conducted diagnostic testing of valves using Teledyne strain gauges and QUIKLOOK software

Advanced Research and Development Co-op

July 2014 - Jan. 2015 — Stoneridge Inc., Canton MA, USA

- Developed new high-temperature thermocouples targeted for next generation passenger cars
- Performed temperature testing of thermocouples at +1000 °C to gather data for calibration
- Independently conducted two-month magnet characterization study for turbo actuator project
- Operated laser welder, x-ray inspection machine, sand laser, table saw, lathe, diamond saw
- Generated 3D models and technical drawings using Pro Engineer Wildfire 4.0
- Tested and characterized hall effect sensors, turbo actuators, and magnets in support of multiple advanced development projects
- Soldered PCBs for customer builds, testing, and prototyping purposes

SKILLS

Languages: English (native speaker), German (TestDaF Certified), Spanish (B2), French (B2)

Communication Skills:

- Excellent communication skills applicable to professional and academic environments gained through 16 months of full-time work experience and degree programs
- Comprehensive understanding of intercultural differences and their effects on communication gained through study and work experience abroad, intercultural communication course, and extensive international travel
- Experienced in working effectively in teams from both academic and professional projects

Technical Skills:

- Software: SolidWorks, AutoCAD, MS Office Products, Pro Engineer, QBlade, MATLAB, Simulink, LabVIEW, ANSYS
- Instruments: Laser welder, x-ray inspection machine, lathe, polisher, precision diamond saw, cabinet sandblaster, soldering iron, strain gauge, rotary position sensor, thermocouple, pressure transducer, instron universal testing machine

ACADEMIC PROJECTS

Master's Thesis
Feb.-Aug. 2020

- Title: Science Communication and the Future Energy System. *Ensuring a successful societal shift toward sustainability through effective science communication practices.*
- Thesis was concerned with how scientists can effectively communicate with members of the public based off of empirical evidence from the social sciences. Human communication dynamics, best science communication practices, climate change, the information deficit model, and a potential path forward were analyzed and discussed at length.

Small Wind Farm Project
April-Aug. 2018

- Semester-long group project for Wind Energy Project course at TU Berlin. Project began with research and project management and finished with energy generation simulations and structural analysis.The result of the project was a proposed installation of 85 small wind turbines on the roof of the Flughafen Tempelhof building each with a 3 m diameter. Based off of the yearly wind profile of Tempelhof it was determined that such an installation could generate 300,000 kWh of energy per year which could completely power about 95 German households.

HOBBIES / INTERESTS

- Music production, guitar, piano, veganism, cycling, cosmology, philosophy, reading, languages