George C. Henderson

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Education:

Pilot & Instrument Rated Advanced Aviation Ground Instructor, Sept. & Nov. 2011 resp
Flight Training for Commercial Pilot Certification, Nov. 2013
Scored 90% + on all FAA exams
Studied Federal Aviation Regulations (FARs) & avionics systems (including G1000)
Able to provide aviation ground instruction for all FAA pilot certifications

Graduate Mechanical Engineering Courses/ progress towards PHD, Temple U., *GPA: 4.0*
Emphasis in Composite Materials, FEA/ FEM, & Renewable Energy
Wrote computer programs and did PowerPoint Presentations
Organized and participated in study sessions with classmates
Scored 100% on final exams

M.S., Aerospace Engineering (Aerodynamics/ Fluid Mechanics/ Propulsion emphasis)
Wichita State University, *GPA: 3.65*

Master of Engineering, Engineering Science, graduate courses
Pennsylvania State University

B.S., Aerospace Engineering, Pennsylvania State University

Relevant Course work:

- Aerodynamics
- Stability & Control of Aircraft & Missiles
- Aerospace Propulsion
- Aeroelasticity
- Computational Fluid Dynamics (CFD)
- Computer Aided Design (CAD)
- Boundary Layer Theory
- Advanced Heat Transfer
- Finite Elem. Method/ Anal. (FEM/ FEA)
- Composite Materials
- Renewable Energy
- Complex Mathematics

Research:

"Aerothermodynamic Heating of Hypersonic Vehicles & Thermal Protection Systems"
"The Advantages and Disadvantages of a Canard on the Performance of an Aircraft"
"History & Subsystem Design of the Mars Viking I & II Lander Spacecraft"

Computer Experience:

ANSYS & SolidWorks FEA software, & review of Finite Element Method, Temple U., May '09
ANSYS Fluent CFD (Computational Fluid Dynamics) software & review, Temple U., Dec. '16
Certificate in SolidWorks & Advanced (3D) AutoCAD, Penn. State U., Dec. 2007, *GPA: 4.0*
Comptia A+ computer certified – Able to repair, upgrade, network, and assemble computers
Training for Network+ & CCNA (Cisco Certified Network Associate) certifications, Aug. '16
Volunteer Computer Technician & Electrician at local church, Feb '14 to Dec. '16
- Performed electrical design, test, and repair; Diagnosed and repaired computers

Network Administrator, July '99 - Present: developed, expanded, & maintain LAN system
Languages: HTML, Fortran, Visual Basic, Java (applets, threads, jsp files, ...), C++, etc.
AutoCAD, SolidWorks, Pro-E (2/09), Catia, MathCAD, MATLAB, GRAPE, Plot3D, etc.

Recent Work Assignment:

Self Employed, Teacher/ Tutor -- Math, Science, and Computer Technology
- teaching/ tutoring of Math (including SAT Prep.), Science (e.g., Structural Analysis, Aeronautics/ Propulsion, Astronomy, Chemistry, & Biology), & Computer Tech. (e.g., SolidWorks, MS Word, & Internet Explorer)
- evaluating student's knowledge of subject material
- advertising
- developed and updated plans of what to teach and how to teach it
- clients were happy with my teaching technique and with what was learned

Engineering Work Experience:

Lockheed Martin, Special Operations Support Activity, Engineering Stress Group
(Defense industry - development/ modification of H-60 helicopters for US Special Operations)
Aeronautical Engineer (via Aerotek)

- performed structural analysis of H-60 helicopters for US Special Operations forces
- suggested solutions to design problems; mentored new employee
- utilized Catia and SolidWorks 3D CAD programs, and Ansys FEA software
- communicated/ interacted with aircraft technicians and other engineering groups

Navmar Applied Sciences Corp. (Defense industry - unmanned aircraft and hovercraft)
Aeronautical Engineer

- researched UAVs, and the design & construction of the Mako UAV/ UAS
- wrote Mako UAV/ UAS (Unmanned Aerial Vehicle/ System) documentation
- coordinated production of 1/48 th scale pewter models of the Mako aircraft
- trained to be a Mako UAV pilot and suggested product improvements
- researched CFD programs and the multi-engine aircraft configuration
- researched hovercraft, hovercraft technology, the global problem of landmines and unexploded ordinance, and landmine equipment/ technology
- calculated required power output of hovercraft engine
- submitted business plan and participated in hovercraft design, construction, & test.

Piasecki Aircraft Corp. (Development of compound helicopter with ducted fan propulsion)
Aeronautical/ Electrical/ Mechanical Engineer

- developed electrical loads analysis of YSH-60F/ VTDP aircraft per Mil-E-7016F
- studied electrical components, flight characteristics, and design of H-60 helicopters
- performed aerodynamic analysis of wing, propeller, and tail of YSH-60F/ VTDP
- calculated actuator load and displacement requirements
- wrote aeronautical reports using criteria from ADS-29, AR-56, & CFR 14 (Part 23)
- wrote and updated specifications of aircraft's electrical and mechanical components
- met and communicated with vendors to determine suitability of their products
- performed structural analysis and provided wing shape and mass distribution data in support of compound helicopter's NASTRAN (FEA/ FEM) wing model
- responded to customer (Navy) queries & participated in Preliminary Design Review

Vinokur-Pace Engineering, Inc. (Heating, Ventilation, & Air-conditioning Industry)
Mechanical Engineer/ Draftsman

- designed fire protection system & calculated thermal requirements of various buildings
- performed duct pressure loss and lighting electrical power calculations
- studied heating, ventilation, and air-conditioning material (ASHRAE Certified 4/99)
- copied, traced, filed, and verified accuracy of architectural blueprints
- entered sketches & blueprint updates into computer via AutoCAD

Naval Air Systems Command, Avionics Department (Acquisition of aviation products - Navy)
Engineering Intern

- completed extensive training in avionics and the government acquisition process
- organized and monitored electronic warfare branch security activities
- presented engineering change proposal
- led charitable fund raising campaign (received award)
- reviewed technical content of government and contractor documentation

Boeing Helicopters, Manufacturing Technology Division (Data acquisition - composite parts)
Aerospace Technician, contract position via CDI

- analyzed blueprints to develop database for V-22 tiltrotor aircraft components
- drafted aircraft components
- conducted length determinations using a variety of calculations
- studied the manufacturing process of advanced composite & honeycomb structures

Pennsylvania State University, Aerospace Engineering Dept.
Technical Assistant, Summer work/ study position

- wrote computer program to perform thermal time dependent analysis of a rod via numerical solution of the Heat Conduction Equation
- worked with computer-aided design program
- entered graphs into computer and collected data for further analysis

Activities:

- Designed a hypothetical rigid inflatable satellite with a large phased array antenna for a national AIAA-sponsored satellite design competition
- Participated in construction of Wichita State University's SAE model cargo plane
- Experienced in fabrication and utilization of aircraft components (including molds) made of composite materials
- Wrote numerous technical programs (CFD, FEA, propulsion, thermodynamics, aircraft navigation & flight planning, aircraft flight simulation, spacecraft orbital simulation, ...)
- Visited/ attended air shows, aerospace and science museums, aviation manufactures, NASA facilities, observatories (astronomy), and aviation related presentations
- Scored "A"s in High School Aerospace Engineering, Chemistry, Physics, & Math
- Life Member: American Institute of Aeronautics & Astronautics (AIAA), Sierra Club, National Geographic Society, Academy of Model Aeronautics (AMA), & Soaring Society of America (SSA)
- Member: Valley Forge Signal Seekers (VFSS) (radio controlled model airplane club), Boy Scouts of America (BSA)
- Assistant Scoutmaster & Counselor for Aviation, Space Exploration, Canoeing, and Small Boat Sailing Merit Badges
- Former YMCA Lifeguard and Swim Instructor
- Licensed Health Insurance Agent (discussed & sold Medicare prescription drug plans)
- Speak fluent Greek
- Hobbies: designing, building, testing, & flying model airplanes & rockets; astronomy; soaring; skiing; ballooning; sailing (Red Cross certified 10/87); scuba diving (PADI certified 7/94); kayaking (American Canoe Association certified 5/98); wilderness canoeing; photography; reading science fiction & aerospace literature; bicycling; chess