Firat Irmak

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Objective

To gain hands-on, real-world experiences through research-oriented opportunities.

Education

University of Central Florida (UCF)
Master of Science in Aerospace Engineering(MSAE) Expected: Fall 2017

Thermofluid Aerodynamic Systems Design and Engineering Track

GPA: 3.71/4.0

Bachelor of Science in Aerospace Engineering(BSAE) December 2016

Accelerated BS to MSAE Track

GPA: 3.65/4.0 Engineering Major GPA: 3.85/4.0

Experience

UCF Mechanics of Materials Research Group: (Research Assistant) 2015- Present

- Responsible for creating a MATLAB code for calculating the creep-fatigue life prediction of a low alloy steel material. This code was developed for a Siemens-UCF Collaborative Project.
- Research focus on elevated temperature ratcheting of steels under multi-axial conditions with dwells.
- Developed a simulation approximating the multi-axial conditions for a specimen.
- Lead a group of students to construct a software to simulate the deformation response and the life prediction of variety materials.

UCF/NSF I-CORP Cohort: (Entrepreneurial Lead) March-May 2017

- Learned the fundamentals of starting a company based around an Academic research-developed technology. Educated on how to develop a business model canvas and the significance of the customer discovery process.
- Interviewed many customers in various engineering fields for learning their technical issues on structural design and testing.

Turkish Airlines Technic: (Intern) December 2015- January 2016

- Worked as an engineering intern in the Management of Power Systems Engineering department.
- Assisted the engineers with the maintenance of turbofan engines, such as CFM-56 and Pratt & Whitney V2500 series.

Projects

Senior Design Project: Distributed Electrical Propulsion Aircraft 2016

- Developed CFD analyses for various design phases using Star CCM+ and ANSYS Fluent. This included a transient state flow over moving propellers on a wing.
- Constructed an experiment for the validation of the CFD analyses.
- Selected the materials for the aerodynamic related sections of the plane.

Publications

- Irmak,F., Gordon, A.P., Medelin,D., Bouchenot,T., Felemban,B. "Life Prediction of a Low Alloy Steel under Uniaxial loading with Creep-Fatigue" Journal of Engineering Materials and Technology(In-Progress), 2017.
- Irmak,F., Gordon, A.P., Bouchenot,T., Felemban,B. "A Reduced Order Life Prediction Modeling Approach for Materials under Thermomechanical Fatigue" AIAA Science and Technology Forum (In-Progress), Kissimmee, FL, January 8th – 12th ,2018.
- Gordon, A.P., Irmak,F., Medelin,D., Bouchenot,T., Felemban,B. "Application of Non-Interactive Constitutive Model for Life Prediction of 2.25Cr-1Mo under Creep-Fatigue" ASME International Mechanical Engineering Congress and Exposition ,Tampa, FL, November 3rd-9th ,2017.
- Felemban,B., Gordon, A.P., Irmak,F. " 2.25Cr-1Mo Steel under Multiaxial Loading with Creep and Plasticity" (In-Progress),2017.
- Irmak, F. "Creep-Fatigue Life Prediction of 2.25Cr-1Mo Steel" Master's Thesis (In-Progress) University of Central Florida, Orlando, FL, 2017.

Outreach

US Army Program Executive Office for Simulation Training and Instrumentation High School Engineering Internship Program (PEO STRI): (Student Mentor) 2013- 2016

- Assisted high school students with SeaPerch underwater robot design, building, and testing phases. Developed prototypes as models for the students.

Student Involvement

American Institute of Aeronautics and Astronautics Club 2014- Present

Technical Skills

Proficient in: MATLAB, ANSYS, Fluent, Star CCM+, Parallax, Creo, Solidworks, Microsoft Word, Excel, PowerPoint,
Familiar with: Mathcad, AutoCAD, Arduino

Honors / Awards

- President's Honor Roll
- Dean's List
- Bright Futures Florida Academic Scholars Scholarship