ANDY (SEUNGHYUN) KO

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SUMMARY

- Strong background in structure failure analysis in both theory and experiments (200+ hrs.) through multiple projects.
- Solid hands-on experience (4+ yrs.) in FEA software such as Abaqus, Hyperworks, and Matlab.
- Highly self-motivated and goal oriented engineer with trained analytical thinking and problem-solving skills.
- Qualified team player under a fast-pace environment with diverse experience in team management.

EDUCATION

University of Washington — Seattle, WA

Ph.D in Aeronautics & Astronautics Engineering, GPA: 3.80/4.0 — Expected June 2019

Recipient of S. Rao and Usha Varanasi endowed fellowship and top graduate scholar award (top 5%)

Courses: Finite element analysis, Aerospace structures, Composite structures, Fracture mechanics, Fatigue of materials

University of Washington — Seattle, WA

BS in Aeronautics & Astronautics Engineering, GPA: 3.70/4.0 — June 2015

PROJECTS AND RESEARCH EXPERIENCE

Safety and Certification of Discontinuous Fiber Composite Structures, UW — Seattle, WA

Research Assistant — May 2016 - present

- Investigate product design guidelines, material test methods, and finite element modeling tool for certification process of discontinuous fiber composite to FAA, Boeing, and Hexcel.
- Develop 2D FE model of the random discontinuous fiber structure using Hashin damage criteria, achieve 500 % increased analysis efficiency by directly correlating geometry model from Matlab to Abaqus using Python language.
- Conduct 100+ hrs. of notch tension experiments over 150+ composite coupons, analyze stress and strain distribution of structures using digital image processing tools
- Manage entire manufacturing and test process from initial concept to manufacturing design, prototype testing, and final production phase as a lead researcher for group of 3 master and 8 undergraduate students.
- Organize and present progress updates in weekly meeting and prepare monthly technical reports to FAA.

Investigation of Critical Crack Propagation Angle of Carbon Composite, UW — Seattle, WA

Research Assistant — Mar. 2015 - June 2016

- Performed manufacturing quality control assessment on VARTM process, improving 75% manufacturing success rate by conducting multiple trade studies of possible root causes of resin dry spot area.
- Enhanced accuracy of strain measurement technique by implementing non-contact digital image correlation system.
- Optimized carbon composite layup of thin ply technology by accurately simulating splitting crack behavior using Abaqus, improving first splitting crack strength to 20%.
- Defined and initiated the project, responsible for project management and prioritization as well as documenting the manufacturing process and experiment results.

Development of High Performance Composites on C-Ply Technology, UW — Seattle, WA

Research intern — June - Sept. 2014

- Collaborated with a team of 6 students, manufactured industry quality carbon composite wind turbine blade section starting from initial design, material selection to mold preparation and final assembly.
- Evaluated manufacturing process of spar sandwich panel structure by experimenting with different foam core materials and successfully manufactured with 50% reduced cost.

TECHNICAL SKILLS

Abaqus (4+ yrs.), Matlab (5+ yrs.), Python (2+ yrs.), Hyperworks, Ansys, Femap, Solidworks, Excel, Java

PUBLICATION

Y. Kim, **S. Ko**, W. Lay, J. Tian, P. Chang, S. Thielk, H. Bang, J. Yang (2017) "Effects of Shallow Biangle, Thin-Ply Laminates on Structural Performance of Composite Wings", *AIAA Journal*, 55(6) 1-7