TAEHYUNG KWON

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CORE COMPETENCIES

- Thermofluids
- Material Processes
- Computer Aided Design
- Mechanics/Dynamics
- Engineering Machineries
- Solution-oriented
- Energy/Power Utility
- Data Analysis/Management
- Efficient Collaborator

EDUCATION

Stanford University, Stanford, CA: PRESENT
Masters, Civil and Environmental Engineering
- Relevant Coursework: Energy Economics, Data Analytics on Power Distribution, Renewable Energy

Columbia University, New York, NY: 2022
Bachelor of Science in Mechanical Engineering – (GPA: 3.73)
- Relevant Coursework: Thermofluids, Renewable Energy Generation/Distribution, Machinery, Data Science, Politics, Economics

Purdue University, W. Lafayette, IN: 2019
Bachelor of Science in Mechanical Engineering – (GPA: 3.79)
- Completed 40 credits towards B.S. in Mechanical Engineering
- Awards: 1st Place Research Poster Symposium | 1st Place Engineering Design Challenge | 1st Place Purdue Korean Soccer Team

RELEVANT EXPERIENCE

COLUMBIA QUADRACCI ENGINEERING LAB | NEW YORK, NY | 2021-2022
Data Scientist and Mechanical Engineer
- Executes data analytic energy management project to study the optimal balance between electrification and grid decarbonization based on generation and usage variables of NY state.
- Collaborates extensively with graduate students, providing insightful solutions and critique of projects during weekly meetings.

MACHINE DESIGN: AUTOMATED ROBOT LINKAGE MECHANISM | NEW YORK, NY | 2021
Mechanical Engineering Lead
- Designed, built, and controlled a complex linkage mechanism to press given arcade buttons in sequence as quickly as possible.
- Responsible for kinematic planning, creation of a detailed 3D model, manufacturing of linkage components, wiring, sensor usage, signal processing, transmission design, control system tuning, and actuation.
- Received an honor to be the first team to reach 3-digit score without requiring robot modification after the deadline

THERMOFLUIDS PHYSICS PROJECT | NEW YORK, NY | 2021
Mechanical Engineering Researcher
- Analyzed the energy efficiency of PTAC through Heat Transfer simulation in different seasons as a self-driven project.
- Employed EnergyPlus+ software alongside data analysis for entire building energy simulation to model the effect of PTAC on energy consumptions.
- Invited to present the realistic effect of convection and irradiation through EnergyPlus in Spring 2022 Heat Transfer undergrad. course recitation.

FLUID DYNAMICS RESEARCH | W. LAFAYETTE, IN | 2019
Wind Energy Research
- Conducted fluid dynamic research over complex topography near the Andes Mountain Region to estimate energy yield and examine the feasibility and efficiency of wind turbines in high-altitude mountainous regions with low air density.
- Visited 3 Peruvian universities in Cusco, Puno and Arequipa to gather evidence and resources for further research, whilst gaining invaluable insight on understanding environmental and cultural barriers experienced by different communities for energy access.
- Presented in the "72nd APS Division of Fluid Dynamics" in 2019.

ADDITIONAL PROJECTS

COLUMBIA ROBOTICS CLUB | NEW YORK, NY | 2019-2022

Mechanical Engineer, International Underwater Robotics Competition (MATE ROV)

- Designed the main body of underwater robot CAD model by utilizing efficient materials and processes to increase strength and agility from start to finish for the MATE ROV competition, saving over $300 in costs.
- Conducts extensive research on a variety of existing underwater technologies and identified potential areas for improvement for waterproofing the body and maintaining underwater system functions.
- Creatively directed the team's sponsorship video for Logitech, Microsoft, Boeing, and The Drone Racing League.

LEG-SHAKE SYNDROME PROJECT – COLUMBIA UNIVERSITY | NEW YORK, NY | 2020

Mechanical Engineering Researcher

- Identified potential issues and solution on Leg-Shake Syndrome and other leg-shaking habits through in-depth qualitative research
- Created sophisticated yet creative 3D model of Leg-Shake therapeutic device by qualitatively compiling the data received from research and surveys

DATA SCIENCE PROJECT – COLUMBIA UNIVERSITY | NEW YORK, NY | 2020

Data Structures Engineer

- Market-analysis research on various game-oriented corporations such as Nintendo, Activision, and Sony with a focus on consumer purchasing trends between 2000 to 2018.
- Utilized Python to analyze existing annual trends between growing genres of games and consumer preferences, discovering a sales gap between 'violent' and 'non-violent' games despite increasingly new varieties of M-rated games.
- Took the initiative to further apply the discovered trends, along with related predicative statistics, onto video game industries.

AWARDS

I^2D EXPOSITION: GLOBAL ENGINEERING RESEARCH POSTER SESSION | W. LAFAYETTE, IN | 2019

Freshman Researcher / Speaker

- Received 1st place award as the First Freshmen winner in Purdue University History.
- Performed at a poster presentation on High Altitude Wind Turbine Energy in Mountainous Regions.
- Spearheaded the design of graphics and 3D models of the Andes Mountain topography for the presentation.

ENGINEERING DESIGN PROJECT CHALLENGE | W. LAFAYETTE, IN | 2018

Mechanical Engineer / Team Leader / Best Team Award

- Designed solution-oriented "Teaching System" on Spark Cylinder for Kenyan students at Tumaini Center under given constraints.
- Controlled and created a 3D model with Teaching Application from start to finish.
- Presented at the final presentation as the representative speaker of the team.

ADDITIONAL CREDENTIALS AVAILABLE IN LINKEDIN

TECHNICAL SKILLS	Microsoft Office / Google Suite / Solidworks / AutoDesk Inventor / AutoCAD / AutoDesk Fusion360 / Sketchup / C / Java / Python / Matlab / G-code / EnergyPlus$^+$ / Machining /Adobe