HARKANWARVEER SINGH KANG

(A.K.A. Hark)

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Mechanical Engineer (BSME, May 2025) with hands-on design experience in utility structural design and aerospace manufacturing environments. Strong CAD/FEA/CFD skills (SOLIDWORKS, Creo, Fusion 360, ANSYS) and experience leading cross-functional teams through design reviews, prototyping, and testing. Interested in mechanical design, structural analysis, and product development roles.

Education

Bachelor of Science in Mechanical Engineering **August 2021 - May 2025**

The University of Texas at Dallas Richardson, TX

Technical Skills

CAD/CAE:	SOLIDWORKS (CSWA), PTC Creo, Fusion 360, AutoCAD, ANSYS (FEA/CFD)
Programming:	Python, MATLAB, C++, Java
Manufacturing/Test:	3D printing, soldering, mechanical testing, hand/power tools
Engineering:	GD&T, FMEA, design reviews, DFM/DFA (add if true)
Project Tools:	Microsoft Project, Excel

Experience

Design Engineer **August 2025 - Present**

Pike Engineering

- Designed utility pole structures/assemblies to meet NESC and client standards, producing permit-ready plan sets and reducing revision cycles through early checks.
- Evaluated non-standard site constraints (distribution line clearances, terrain changes, property owner conflicts, etc) and applied engineering judgment to develop safe, buildable solutions aligned with permitting requirements.
- Audited legacy design packages, corrected documentation/compliance gaps, and lowered rework risk by standardizing checks (loading assumptions, connection details, drawing accuracy).
- Coordinated design decisions with PMs and field teams to resolve constructability issues early and delivered 3-5 design packages per week

Engineering Team Lead **August 2024 – May 2025**

UTDesign Capstone

- Led a 6-person mechanical/biomedical team to design a neonatal lumbar puncture assistance device for clinicians at UT Southwestern; drove requirements, concept selection, prototyping, and validation planning.
- Managed schedule and deliverables in Microsoft Project (WBS + Gantt), keeping design reviews and build/test milestones on track through May 2025.
- Presented formal design reviews and progress updates to faculty, mentors, and clinical stakeholders; incorporated feedback into iterative design changes.
- Built and tested prototypes, refining ergonomics, manufacturability, and usability to reduce training burden and improve repeatability; reduced cost of successful procedure by 90% as compared to current standard of care

Engineering Intern **May 2024 - August 2024**

The Boeing Company Auburn, WA

- Partnered with Design, Liaison, Quality, and Process Engineering to standardize a First Article Inspection workflow; improved inspection consistency and reduced ambiguity in FAIR execution.
- Completed FAIR documentation and supported root cause analysis with QA to resolve nonconformances and strengthen process controls.
- Designed and tested lightweight satellite casing concepts with Boeing Additive Manufacturing; evaluated designs for manufacturability and structural requirements
- Competed in NSBE Design Challenge to improve passenger service unit; delivered a tested & validated design proposal using historical research, customer feedback, and company design considerations/preference; simplified PSU design, making it easier and more accessible to both passengers and airline personnel

Design/Build/Fly Mechanics Team Member **January 2023 – May 2025**

UT Dallas American Institute of Aeronautics and Astronautics (AIAA)

- Modeled fuselage concepts in SOLIDWORKS and ran CFD/structural simulations (ANSYS Fluent) to optimize aerodynamic performance and structural margin.
- Owned fabrication material selection by balancing cost, strength, & weight.

- Designed an in-flight payload release mechanism and validated function through prototype iteration and flight trials.
- Created and executed flight, landing, & structural test plans and iterated electronics integration to improve reliability and reponsiveness.

Awards, Certifications & Licenses

- EIT (FE Exam): Scheduled March 2026
- 3rd Place, National – DEBUT Challenge, 2025
- Certified SOLIDWORKS Associate (CSWA) – Dassault Systèmes, 2025
- 1st Place, University – UTDesign Capstone, 2025
- 2nd Place – NSBE Boeing Design Challenge, 2024

Projects

NeoTap **May 2025 – Present**

Neonatal LP Assistance Device

- Continuing undergraduate capstone project, aiming to bring a completed product to market; provisional patent draft in progress
- Refining design to create a minimum marketable product while maintaining low cost and easy maintenance/repairability
- Working to improve manufacturability and reduce design complexity to reduce projected production costs

Fluid Flow Simulation **August 2023 - December 2023**

- Utilized Ansys Fluent CFD simulation software to simulate the airflow over a standard American football
- Defined environmental values (air density, velocity, and viscosity) and obtained Coefficients of Drag, Lift, and Pressure
- Created report consisting of results from Ansys Fluent and used results to recommend changes to the shape of the standard American football to improve airflow

Wind Turbine Design **August 2021 - December 2021**

- Tasked with determining the most efficient and highest energy-producing blade design
- Developed three wind turbine prototypes with the final design generating up to 2.25W, 8% higher than class average
- Collaborated with a team of four (4) to design and test multiple prototypes of wind turbines to develop efficient and highest energy-producing design
- Introduced to AutoCAD and learned operation of laser cutter

Extracurricular Activities

Events Coordinator **August 2021 - December 2024**

UT Dallas Sikh Students Association

- Led the event planning, created list of required materials, delegated duties, and oversaw timely completion of tasks in order to host a successful event for members
- Organized and coordinated events up to 200 people, handling logistics, budgeting, and team delegation

Automobile Modifications

- Upgraded suspension to lift vehicle by 2 inches
- Upgraded Jeep's factory equipment by adding off-road tires and wheels, stronger front bumper, lift kit, and additional external lighting to better suit off-roading and aesthetic preferences
- Designed custom housing for switches that control external lights using Fusion360 and 3D printed multiple iterations with design adjustments
- Designed and installed semi-automatic pulley and gear system to store the hard-top roof to increase efficiency and decrease manual strain