

SHANTANU VYAS

College Station, Texas

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EDUCATION

Texas A&M University, College Station, TX
Master of Engineering, Mechanical Engineering

May 2019

GPA: 3.7/4.0

SRM University, Kattankulathur, India
Bachelor of Technology, Mechanical Engineering

May 2017

GPA: 3.5/4.0

WORK EXPERIENCE

Texas A&M University | Mixed-Initiative Design Lab
Research Volunteer

Oct 2019 - Apr 2020

College Station, TX

- Developed Augmented Reality (AR) system for searching and creating geometric models in three-dimensional space.
- Generated surface mesh for geometries based on parametric equations in C#.
- Designed immersive environment in Unity to understand correlation of designers' performance and spatial exploration.

ACRi India
Research Intern

Jun 2018 - Aug 2018

Bangalore, India

- Built a Deep Neural Network using Keras, to predict fluid flow in a geometry, reducing calculation time by 90%.
- Minimized prediction errors to less than 5%, by efficiently analyzing data-set.
- Generated a data-set for a lid driven cavity for Reynold's number (Re) ranging from 10 to 10000.

ACADEMIC PROJECTS

Downtime analysis and reduction strategies for VT Industries

Feb 2019 - May 2019

- Followed Six Sigma's DMAIC methodology to analyze and classify downtime data of a triple head saw.
- Generated Pareto charts to find the main causes of downtime being limit switches.
- Created a Bill of Materials (BOMs) for proposed solutions, helping reduce downtime by 50% and saving \$9000 annually.

Designing and Prototyping a Fire Alarm for the Disabled

Apr 2019

- Lead a multi-disciplinary team to design and prototype a fire alarm for people with disabilities.
- Gathered customer requirements and brainstormed concepts, targeting more human senses than traditional fire alarms.
- Rapid prototyped mechanical design and assembled electronics and mechanisms to create a working prototype.

Product Design - Posture Correction Device with Active Feedback

Sep 2018 - Dec 2018

- Curated customer requirements through voice of customers (VOC) and market research.
- Developed concept sketches to finalize product design, focusing on cost & parts reduction.
- Designed CAD model using SolidWorks and developed Failure Mode & Effects Analysis (DFMEA) to reduce part failure.

Thermal Analysis of a Trigeration System

Sep 2018 - Dec 2018

- Modeled the thermodynamic cycle of a system comprising of a single-effect LiBr-Water absorption chiller on EES.
- Improved 1st and 2nd law efficiencies by 10% each, by optimizing desorber inlet temperatures and finding ideal gas turbine power output.

Design of a Flexible Riser Inspection Tool

Feb 2018 - May 2018

- Designed a non-destructive inspection tool for flexible pipes in offshore oil rigs using SolidWorks and GD&T.
- Used design for manufacturability and assembly principles to reduce parts and choose suitable materials and manufacturing processes.
- Performed Finite Element Analysis on load bearing parts and improved factor of safety by redesigning components.

Computational Fluid Dynamics (CFD) Algorithm

Jan 2018 - May 2018

- Developed CFD solver using Semi-Implicit Method for Pressure Linked Equations (SIMPLE) algorithm on MATLAB.
- Used the solver to calculate thermal & fluid flow properties in applications like lid driven cavity backward facing step.
- Optimized the solver to reduce runtime by 30%, with fewer iterations.

Design and Analysis of an Energy Storage System

Jan 2017 - May 2017

- Designed an energy storage system in SolidWorks, to store cold thermal energy between chiller and air handling unit.
- Strategically arranged PCM capsules to increase heat transfer and simulated process on ANSYS Fluent.
- Designed experimental setup and used an Arduino & thermocouples to gather data & validate simulation results.

SKILLS & COURSEWORK

Coursework	Computer Aided Engineering & Design (CAD), Product Design, Finite Element Methods, Design for Manufacturing & Assembly, Lean Manufacturing, Manufacturing Technology, Thermodynamics, Fluid Mechanics
Software & Tools	SolidWorks, Creo, ANSYS, Unity
Programming	Python, C#, MATLAB, Arduino, Keras, Tensorflow, Torch