Mechanical Engineer with industry experience in structural design and analysis, and design for manufacturing. Master’s Degree in Mechanical Engineering, with thesis work on numerical modeling of porous nanomaterials.

# EDUCATION

## UNIVERSITY OF WASHINGTON, Seattle, WA

### Master of Science in Mechanical Engineering, March 2023

#### Thesis: Large Strain Finite Element Analysis of Spinodal Shell Structures

* Created finite element analysis (FEA) models in Abaqus to match compression test results.
* Developed FEA postprocessing methods in Python, to quantify structural behavior, stress distribution, and damage localization.
* Studied nanomaterial behavior in harsh environments with dynamic and thermal FEA.

#### Courses and Projects:

* Courses: Renewable Energy, Battery and Solar Cell Manufacturing, FEA, Elasticity, Composite Design and Analysis, Nanocomposites and Biocomposites.
* Research projects: Self-assembly and 3D printing of lithium-ion battery electrodes. Manufacturing and material properties of fungus and bacterial cellulose-based biocomposites.

### Bachelor of Science in Mechanical Engineering, Cum Laude, June 2006

* Courses: Materials and Structures, CAD, FEA, Renewable Energy, Design for Environment.
* Projects: Formula SAE drivetrain design, Fuel Cell capstone project.

# WORK EXPERIENCE

## DISCRETE LATTICE INDUSTRIES, Seattle, WA *2021*

### Mechanical Engineer

* Conducted trade studies on the use of a lattice structure in wind turbine blades.
* Performed FEA in Ansys to determine blade deflection and test optimal structural parameters.
* Developed Python and MATLAB scripts for structural calculations and Ansys postprocessing.

## KATERRA, Seattle, WA *2019 - 2020*

### Manufactured Assemblies Design Engineer

* Built prototypes of building components to test functionality, dimensions, and tolerances.
* Created CAD models, drawings, and CNC templates for steel wall panels using Catia 3DExperience.
* Developed bathroom kits in SolidWorks, providing BOMs and drawings for assembly and installation.

## SAFRAN AEROSYSTEMS, Everett, WA *2015 - 2019*

### Design and Integration Engineer

* Led design work on a passenger loading stair for the 737, working with engineers and manufacturing.
* Conducted root cause analysis of failed aircraft waste valves, working with suppliers and customers.
* Designed an aircraft galley drain system integrating structure, sensors, and plumbing.

## BOEING COMMERCIAL AIRPLANES, Everett, WA *2006 – 2012, 2014*

### Structural Design Engineer

* Designed critical structural parts and assemblies on 747-8 and 767, using CATIA V5.
* Coordinated with production facilities from concept to production.
* Worked across groups and disciplines to manage design completion and define interfaces.
* Developed design solutions to factory production problems.

## KVICHAK MARINE INDUSTRIES, Seattle, WA *2012 – 2014*

### Project Engineer

* Developed structure and systems designs for aluminum hulled boats, for use in extreme environments.
* Worked from concept to production providing designs and drawings in Solidworks.