# SUMMARY OF QUALIFICATIONS

* Fourteen years of mechanical and structural design experience, working with SolidWorks and CATIA.
* Knowledgeable in static, dynamic explicit, and thermal FEA.
* Strong interest in renewable energy, composite design and analysis.

# EDUCATION

## UNIVERSITY OF WASHINGTON, Seattle, WA

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

Thesis: Large Strain Finite Element Analysis of Spinodal Shell Structures

Graduate Student Researcher under Lucas Meza:

* Conducted structural and thermal FEA analysis in Abaqus, automated with Python scripting.
* Developed automated nanostructure generation using MATLAB and Python.

Courses: Renewable Energy, Battery and Solar Cell Manufacturing, FEA, Composite Design and Analysis, Elasticity, Nanocomposites and Biocomposites.

Other research projects:

* Researched properties, manufacturing, and applications for fungus and bacterial cellulose-based biocomposites.
* Studied self-assembly and 3D printing of lithium-ion battery electrodes.

### 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.

# RELEVANT EXPERIENCE

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

### Mechanical Engineer

* Produced trade studies regarding the use of lattice structure in a wind turbine blade.
* Conducted FEA analysis in Ansys to determine impact of structural parameters.
* Developed Python and MATLAB scripts for structural calculations and to interface with Ansys.

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

### Design and Integration Engineer

* Conducted root cause analysis of failed aircraft waste valves.
* Developed a new passenger boarding stair for the 737 MAX with extra safety features.
* Designed an aircraft galley waste disposal system.

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

### Structural Design Engineer

* Designed aluminum and composite structural parts and assemblies on 747-8 and 767.
* Coordinated with production facilities from concept to production.
* Worked across groups and disciplines to manage design completion and define interfaces.
* Redesigned critical structural members to reduce weight and complexity.
* Implemented solutions to factory production problems by inspecting completed and installed parts.

# ADDITIONAL EXPERIENCE

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

### Manufactured Assemblies Design Engineer

* Designed building components for off-site fabrication, integrating structural, electrical, and plumbing components.
* Developed a bathroom kit in SolidWorks, providing detailed BOMs and drawings for assembly and installation.
* Created automated model, drawing, and CNC templates for steel wall panels using Catia 3DExperience.
* Built prototypes of manufactured building components to test part and assembly sizing, and to confirm tolerances.

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

### Project Engineer

* Developed structure and mechanical system designs for aluminum hulled boats.
* Worked from concept to production providing designs and drawings in Solidworks.