HARRISON Z. KATZ

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WORK EXPERIENCE

ATA Engineering — San Diego, CA
Mechanical Engineer 3 — 2018 – Present, April – Sept. 2017

- Fatigue and limit state analysis of animatronics, show action equipment, ride vehicles, and supporting structures
- Designed retrofits for existing structures to improve performance, increase life, or address modifications
- Analysis-driven design of weight sensitive ground support equipment for large scale aersospace applications
- Used NX/Nastran to determine stresses in components and assemblies using static and dynamic simulations
- Designed mechanical systems and created detail drawings per customer standards with SolidWorks
- Conducted calculations consistent with foreign and domestic codes to analyze customer designs
- Completed connection design using bolted-joint calculations and weld analysis often considering fatigue

Universal Parks and Resorts : Creative Engineering — Orlando, FL
In House Analysis and Testing - Engineering Intern — April – September 2016

- Assisted in applying / recording accelerometers, load cells, and strain gages to determine and verify loads
- Created stress rainflow diagrams, frequency spectrum data, and histogram distributions using nCode
- Completed calculations for ride system dynamics and stresses for new and existing attractions

Oceaneering Entertainment Systems — Hanover, MD
Mechanical Engineering Intern — April – September 2015

- Used SolidWorks Motion Analysis to model vehicle dynamics to determine vehicle excursion ranges
- Created and modified tracked and trackless ride vehicle profiles using 3DS Max and Show Programmer

Stonefield Engineering & Design, LLC. — Rutherford, NJ
Traffic Engineering Intern — June – September 2014

- Completed AutoCAD concept layouts for new residential and commercial developments

County of Essex Department of Public Works — Verona, NJ
CAD Specialist - Engineering Department — June – September 2013

EDUCATION

University of California – San Diego — La Jolla, CA
M.S. in Mechanical Engineering — Cumulative GPA: 3.72 / 4.00 | Expected Graduation Dec. 2021

Drexel University – Pennoni Honors College — Philadelphia, PA
B.S. in Mechanical Engineering, Minor in Physics — Cumulative GPA: 3.83 / 4.00 | Graduated June 2018

ACADEMIC PROJECTS

Swerve Robotic Platform – Senior Design — Philadelphia, PA
1st Place College of Engineering — August 2017 – June 2018

- Worked in a team to create a three-wheeled vehicle prototype capable of accelerating a 300lb passenger at 1G
- Completed quasi-static finite element simulations to calculate strength safety factors of structure assembly
- Used SolidWorks to design and create fabrication drawings for chassis and steering mechanisms

Model Enterprise – Huss Amusement Ride — Philadelphia, PA
Mechanical Engineering Team Membmer — Jauary – September 2016

- Used SolidWorks to design mechanical system and export bill of materials of parts to be ordered
- Completed dynamic and stress calculations to verify design and size COTS parts appropriately

Drexel Hyperloop Team — Philadelphia, PA
Human Safety Representative — January – March 2016

- Space-X sponsored competition to design and build 3/4 size proof of concept high speed transportation system
- Conducted and advised Failure Modes and Effects Analysis for various subsystems and future feasibility

TEAMWORK AND LEADERSHIP

Theme Park Engineering and Design Group — Philadelphia, PA
Club President (2016 – 2017) — 2013 – 2018

- Organize external speakers hosted at Drexel or via skype to provide industry exposure for students
- Interfaced and met with industry professionals to arrange park and facility tours for students

Ryerson THRILL Amusement Industry Design Competition — Toronto, Canada | Orlando, FL
Drexel University Team - Mechanical Team Member — Oct. 2014, Nov. 2016, Nov. 2017

- (2017) Presented ride system concept and supporting calculations - Received award for Mechanical Design

SKILLS AND PROGRAMS

Software: SolidWorks (Motion & Simulation), NX/NASTRAN, ANSYS Workbench, Abaqus/CAE, MATLAB, AutoCAD, Creo Parametric (Pro-Engineer), Autodesk Inventor, nCode GlyphWorks, DEWEsoft, Google Sketchup