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Alpine, UT 84004
Office: (801) 763-8484

Curriculum Vitae

BRANDON K. CONLIN, BSME, PE

PROFILE

Mechanical engineering expert with 8+ years of experience taking projects from concept to commission in low- and medium-volume environments. Proficient with 3D Computer Aided Drafting (CAD) and Finite Element Analysis (FEA) validation. Electrical Vehicle (EV) chassis layout, design & optimization experience across multiple products. Significant Solidworks CAD & Product Data Management (PDM) customization expertise using VB.NET. Time-sensitive prototype fabricator: CNC programming and machining, laser cutting, press brake operation. 3+ years hands-on experience as a mechanic. Significant experience in designing to OSHA regulations and industry safety standards.

WORK EXPERIENCE

AERIAL ROPEWAY

Gained valuable hands-on experience as a ski lift mechanic for over three years. Performed daily checks, completed scheduled maintenance, and excelled at troubleshooting faults and breakdowns. Worked for a ropeway (ski lift) manufacturer for seven years. Designed several ski lift profiles in accordance with applicable standards, including retrofits and relocations that involved reusing existing equipment. Designed safety systems such as restraining bars. Performed calculations and analyses regarding drive equipment, tower and line equipment. Worked in the field managing the installation of and commissioning new equipment.

INCLINED ELEVATOR – COGGED RAILWAY

Designed complex three-dimensional hillside elevator profiles and terminals. Coordinated with architects, contractors, and their clientele to integrate elevator terminals into landscape and the clientele's premium custom homes. Designed multiple terminal buildings in accordance with applicable standards. Redesigned and completed all engineering analyses on elevator vehicle to bring into conformance with applicable standards. Along with another colleague, designed, developed, and implemented a new hydraulic braking system that varies braking forces depending on multiple vehicle conditions, including passenger load, track pitch, and direction of travel. Worked with vendor to create and custom project-specific passenger cabin. Designed vibration isolating mounts to attach the passenger cabin to the vehicle chassis. Designed a battery carriage that isolates the traction battery mass from the vibration of the vehicle chassis.

ELECTRIC VEHICLE CHASSIS DESIGN

Integral member of multiple electric vehicle design projects across multiple industries. Experienced with design concepts that optimized mechanical, hydraulic and electrical layout for ease manufacturability assembly, and service.

TURF MOWING EQUIPMENT

Experienced with agricultural equipment. Familiar with multiple grass mowing modalities: rotary, reel, razor. Reverse engineered a five-gang fairway reel mower and designed the chassis of a 4WD battery electric competitor. Studied various autonomous rotary razor residential mower robots and designed a 22-inch cutting unit as a direct replacement for commercial reel cutting units. Hands-on experience with adjustment and modification of reel cutting units.

MACHINE VISION OBJECT DETECTION

Familiar with both 2D and 3D sensor technologies for use in safety critical perception of obstacles during autonomous operation of large agricultural machinery. Devise acceptance criteria, create testing protocols, to evaluate the functional limits of each sensor technology. Designed mounting solutions, brackets, to optimize sensor functionality while limiting possibility of misalignment.

CE CERTIFICATION

Experienced with bringing multiple large machinery products into conformance with CE recommendations. Interpreted notification body suggestions and made necessary design changes to guards, safety provisions.

EXPERT WITNESS

Reviewed and provided preliminary feedback on the following cases:

- Occupied chairlift carrier detached from haul rope after striking tower chair guide
- Occupant fell from chairlift carrier

REGISTRATIONS AND CERTIFICATIONS

- Professional Mechanical Engineer (PE)
 - Utah license # 13128013-2202

EDUCATION

- Bachelors of Science, Mechanical Engineering, *Syracuse University, Syracuse NY*
 - Mathematics Minor
 - Athletic Scholarship, Lacrosse