

DAVID KUKLISH

MECHANICAL | SYSTEMS DESIGNER

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213-910-2128

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ENGINEERING VIDEO DEMO: <https://vimeo.com/463910249>

DESIGN ENGINEERING SUMMARY

Mechanical and Systems-Level CAD Designer/Builder, with principal design experience in high-speed robotic sleds, battlefield simulation vehicles, micro-mobility vehicles, and special visual effects for film and special venues.

I enjoy designing and building unique high-performance machines of all types.

SKILLS

SYSTEMS DESIGN

Product Development
Prototyping
Motion and System Analysis
Materials
Motion Control
Motor Drives, PLC
Large Assemblies
Electrical Schematics / Routing

PROJECT MANAGEMENT

Leading Teams
Presentations
Budgeting / Estimation
Document Control
Scheduling
Feasibility Studies
Management
Patent Development

MECHANICAL

Structural Design
Machined Parts
Weldments / Sheetmetal
Extrusions / Injections
Linkages / Rotational
Simulation / FEA
Drafting
GD&T

FABRICATION

Assembly
Metal Fabrication
Machining
Welding
Plasma CNC
Mechanics
Wiring
Rigging

SOFTWARE

Expert in SOLIDWORKS CAD and FEA, SOLIDWORKS Electrical, Excel, OpenBOM, SketchUp, Photoshop

EXPERIENCE

URB-E

November 2020 to August 2022

DESIGN ENGINEER

- Design and engineering of Micro-Mobility systems for Amazon and UPS last-mile urban delivery.
- Design of electric bikes, electric powered trailers, and cargo container systems with emphasis on foldable, space saving structures and mechanisms.
- Developed engineering file management and product tracking systems.
- Manufacturing and Assembly drawings, document control and BOM management.

WESTEFX MILITARY SERVICES

July 2017 to October 2020

PRINCIPAL DESIGN ENGINEER

- For Department of Defense, designed fleet of enemy T-72 Tank and Armored Personnel Carrier "Vismods", with working turrets, pyrotechnic weapons simulators, and MILES targeting systems.
- Humvee mounted for battlefield training exercises, and crewed by three soldiers, each vehicle mimics the capabilities of, and is visually indistinguishable from enemy combatants.
- Designed, tested and fabricated first-article systems and components for fitment, function, safety and ergonomics.
- Increased manufacturing productivity by indexing and standardizing all components for ease of assembly.
- Designed soft-good inflatable components, and digitally painted photoreal graphics to simulate actual vehicles.
- Designed electrical systems, including circuit designs, enclosures, cable routings, connectors, and panel layouts.

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- In total, created and output over 600 parts, 25 subsystems, electrical and pyrotechnic schematics, ergonomic studies, CG and rollover analysis, FEA analysis, storage systems.

MEGA TRAX ROBOTIC CAMERA SYSTEMS July 2014 to Present

PRINCIPAL DESIGN ENGINEER

- Designed and built the WORLD'S FASTEST Robotic Camera Dolly system.
- Currently operates in high-performance sports broadcasts, action films and television including IndyCar, NASCAR, and Rally Cross and under consideration for filming SPACEX live launches.
- Engineered the Electric Powertrain capable of accelerating to 100mph in 3.5 seconds, featuring four independent drives with ethylene-glycol active cooling and dynamic braking.
- Achieved sub-millimeter precision with motion-controlled high-speed barcode positioning, and did so with compliant polyurethane drive wheels and belt reductions.
- Developed and designed 800-Volt LiFePo4 drivetrain batteries, high-amperage automatic remote charging, with infrared BMS communication protocol to chargers.
- Utilized IP-based mesh-net RF control and telemetry and integrated with motion control.
- Designed monorail extrusion, coupling systems, and gas-charged track tensioners with "floating" trestles system to manage thermal expansion in hostile racetrack environments.
- Implemented survey technique and installation protocols allowing quick setup and adjustment over rough terrain.
- Prepared and secured US patents on system and controls methods.

VISUAL EFFECTS SUPERVISOR / MECHANICAL FX DESIGNER 1991 to 2017

SPFX/VFX DESIGNER

- Created dozens of unique SPFX and VFX Systems for high-budget film and television productions, theme parks including Disney/ABC, Universal Studios, and special effects production houses like Cinnabar Entertainment Construction and Stargate Films.
- Invented proprietary production systems, such as motion-controlled camera cranes, gantries and model movers, high-speed cable-cams and man-capable stunt flying rigs. Acoustic and inertial camera tracking systems.
- Specialized in high-speed pyrotechnic cinematography, aerial cinematography, action miniatures, CGI/live-action integration and Process Photography.
- Visual Effects Director and Director of Photography, leading and directing large stage crews in time-sensitive fast-paced singular purpose of "getting the shot".

EDUCATION

EVERGREEN STATE COLLEGE

Olympia, WA

BA in EXPERIMENTAL ANIMATION / FILMMAKING

1985-1989

WASHINGTON STATE UNIVERSITY

Pullman, WA

AA IN THEATER STAGE TECHNOLOGY

1983-1985

LAKES VOCATIONAL TECH.

Tacoma, WA

CERTIFICATE IN COMMERCIAL ART

1983