

# XIAODUAN TANG, PH.D., P.E.

3816 S Lamar Blvd, Austin, TX 78704

E-mail: [tangxiaoduan@gmail.com](mailto:tangxiaoduan@gmail.com)

Cell phone: +1(832)244-4273

[www.linkedin.com/in/xiaoduan](http://www.linkedin.com/in/xiaoduan)

[tangxiaoduan.wixsite.com/home](http://tangxiaoduan.wixsite.com/home)

## SUMMARY

- Ph.D. and P.E. in Mechanical Engineering with 11 years' industry experience in automotive power units and marine propulsion units
- Expert in battery electric vehicle (BEV) gearbox design, BEV thermal management system design, HEV hybrid transmission and differential design
- Experience in EV development through all life cycle phases (from concept to mass production)
- Extensive experience in leading CAD designers, CAE engineers, committees, and projects
- Proficiency in powertrain electrification, mechanical and structural design, CAD, CAE and GD&T
- Published 20+ technical papers. Skilled in written and verbal communication
- Fluent in English and native in Chinese, US Green Card Holder

## EDUCATION

- **Ph.D. in Mechanical Engineering**, Iowa State University, Ames, Iowa, USA **2010 - 2013**
- **M.S. in Power Engineering**, Xi'an Jiaotong University, Xi'an, China **2008 - 2010**
- **B.S. in Thermal and Power Engineering**, Xi'an Jiaotong University, Xi'an, China **2004 - 2008**

## EXPERIENCE

**Revolt Motors - Austin, Texas**

**Nov. 2024 - Present**

*Senior Mechanical Engineer*

***Hybrid Electric Semi-Truck Mechanical System Design***

- Lead technology development of mechanical systems for electric semi-trucks
- Oversee design integration of electric drivetrain systems
- Lead technical design review and training sessions, set design rules and requirements

**Honda Dev. and Mfg of Am., LLC - Raymond, Ohio**

**June 2022 - Oct. 2024**

*Principal Engineer*

***BEV Thermal Management System Design***

- As Sub Project Leader, led team members to develop BEV battery and drivetrain thermal management system (TMS) layout and solved part interference issues. Managed 3D data and released drawings
- Led team members to create technical documents for teaching new associates to design thermal system. Created detailed procedures to help members understand process and requirements
- Created team activity plan, managed budget, and conducted regular reports to management

***Acura TLX 10AT Drivetrain Design***

- Developed Acura TLX 10AT drivetrain from prototype to mass production
- Solved transmission TC case clearance issue and RDU breather failure problems, analyzed root causes, and updated design procedures to prevent future problems
- Created 2D drawings and 3D models, reviewed simulation results, and provided technical judgments

**Ford Motor Company - Dearborn, Michigan**

**Sep. 2016 - June 2022**

*Research Engineer*

***F-150 & Transit BEV gearbox design and analysis***

- Selected eAxle gearbox design to fit in 10+ BEVs including F-150, Bronco, Transit, etc. Saved cost by reducing eAxle complexity

- Designed bolted differential with eLocker, saved cost, and reduced package size
- Designed and analyzed gears, bearings, shafts, splines for BEV gearboxes, managed bearing suppliers
- Led CAD designers to design transmission case, wiring, baffle, cover, etc.
- Led weekly cross-functional meetings with chassis, mount, motor, inverter and manufacturing teams to select power unit and chassis architecture, create underbody packaging, and solve packaging issues

#### ***Edge, MKX & Transit HEV hybrid transmission design and analysis***

- Designed hybrid transmission to fit in HEVs including Edge, MKX and Transit, saved cost and weight by reducing transmission axial length
- Improved design and saved 15% cost and weight on One-Way-Clutch and output flange by FEA
- Solved hardware break issues by calculating dynamic road load with multi-body dynamic analysis

#### ***Power transfer unit (PTU) spin loss testing***

- Co-led PTU spin loss testing project, managed budget, created project schedules and reports
- Organized cross-functional meetings to perform tests. Purchased hardware, determined PTU break-in and testing procedures, solved onsite problems, and analyzed test data
- Led HEV powertrain hardware system and driveline PTU design

### **Thrustmaster of Texas, Inc - Houston, Texas**

**Jan. 2014 - May 2016**

#### ***Structural Engineer***

#### ***Thruster design and structural analysis***

- Designed propeller and thruster components, conducted stress analysis, and created drawings
- Worked with purchasing and suppliers to manage part cost, technical reviews and supplier changes
- Developed company standards for bolt calculation, structural design, and FEA procedures

#### ***Marine propulsion units fatigue and vibration analyses***

- Conducted fatigue and buckling analysis to meet durability requirements
- Collaborated with manufacturing and test engineers to meet production and testing requirements
- Carried out modal and harmonic analyses of complicated thruster model, predicted system vibration

### **CERTIFICATIONS AND LICENSES**

- Licensed Professional Engineer, Michigan State, since June 2018
- Additive Manufacturing: Technology Principles and Applications, MIT Course, Aug. - Oct. 2019

### **PUBLICATIONS**

- Published 20+ technical papers and reports
- <https://scholar.google.com/citations?user=XsA-v88AAAAJ&hl=en>

### **ADDITIONAL INFORMATION**

- Board member, Culture and Change Committee, Honda Power Unit Development Division (2022-2023)
- Co-chair, Cross-functional mentoring program, Ford Chinese Association (2020-2022)
- Director/Member development committee lead, Ford Chinese Association (2018-2022)
- President, Xi'an Jiaotong University Alumni Association in Houston (2015-2016)
- Editorial board member, Biophysical Reviews & Letters (2015-2016)

### **TECHNICAL SKILLS**

Romax	CATIA	AutoCAD	Solidworks
Teamcenter	ADAMS	ABAQUS	ANSYS
Fusion	FEA	MBD	GD&T