Exponent®
Engineering & Scientific Consulting

Dale Jiang, Ph.D.

Senior Engineer | Vehicle Engineering
Austin
+1-512-634-2962 | djiang@exponent.com

Professional Profile

Dr. Jiang specializes in accident reconstruction and the application of mechanical engineering principles to analyze on-road and off-road vehicles and associated components. His experience in investigating and analyzing motor-vehicle low and high-speed impacts includes conducting vehicle and site inspections, 3D scanning, computer simulation, and application of fundamental principles of physics.

Dr. Jiang has received specialized training in vehicle impact simulation. He holds a Ph.D. in Mechanical Engineering from Baylor University. His doctoral research focused on investigating gas-liquid interaction in fuel injection using computer simulation. He also worked on mechanical characterization of polymer composites fabricated by additive manufacturing technique, and he developed a numerical scheme to optimize material distribution and fiber orientation in additive manufacturing process.

Dr. Jiang has experience in multi-phase fluid flow simulation, parallel computing, finite element analysis, 3D CAD, Python, MATLAB, machine learning, physics-informed neural network, Fortran, mechanical testing instrument (Instron), scanning electron microscope, various material characterization devices, HVE, and Rhinocerous 3D.

Academic Credentials & Professional Honors

Ph.D., Mechanical Engineering, Baylor University, 2021

M.S., Mechanical Engineering, Baylor University, 2017

B.S., Mechanical Engineering, Baylor University, 2015

ASME North Texas Section Student of the Year for Baylor, 2019-2020

2019 AIAA Aviation Flow Visualization Showcase: Most Quantitatively Description Flow Visualization

Baylor Presidential Fellowship Scholarship

Licenses and Certifications

Professional Engineer Mechanical, Texas, #150989

FAA Part 107 Certified Commercial Drone Pilot (TX)

Professional Affiliations

American Society of Mechanical Engineering

Languages

Mandarin Chinese

Publications

Journals

Jiang, D., & Ling, Y. (2021). Impact of inlet gas turbulence on the formation, development and breakup of interfacial waves in a two-phase mixing layer. Journal of Fluid Mechanics, 921, A15. doi:10.1017/jfm.2021.481

Delin Jiang, Yue Ling, Destabilization of a planar liquid stream by a co-flowing turbulent gas stream, International Journal of Multiphase Flow, Volume 122, 2020, 103121

Jiang, D.; Hoglund, R.; Smith, D.E. Continuous Fiber Angle Topology Optimization for Polymer Composite Deposition Additive Manufacturing Applications. Fibers 2019, 7, 14. https://doi.org/10.3390/fib7020014

Delin Jiang, Douglas E. Smith, Anisotropic mechanical properties of oriented carbon fiber filled polymer composites produced with fused filament fabrication, Additive Manufacturing, Volume 18, 2017, Pages 84-94

My Google Scholar link:
https://scholar.google.com/citations?user=_WfX590AAAAJ&hl=en&oi=ao

Conference Presentations

D Jiang, Y Ling. “Impact of inlet gas turbulence on longitudinal and transverse instabilities in a two-phase mixing layer”, Bulletin of the American Physical Society, 2021.

Delin Jiang, Yue Ling, Daniel Fuster, Stephane Zaleski, Gretar Tryggvason. “Manipulating gas-assisted atomization by inlet gas turbulence”. APS Division of Fluid Dynamics Meeting Abstracts. Nov 2019.

Delin Jiang, Yue Ling, Gretar Tryggvason and Stephane Zaleski. "Impact of Inlet Gas Turbulent Intensity on the Characteristics of Droplets Generated in Airblast Atomization," AIAA 2019-3721. AIAA Aviation 2019 Forum. June 2019.

Delin Jiang, Stephane Zaleski, Gretar Tryggvason, Yue Ling. “Destabilization and breakup of a planar liquid stream assisted by a co-flowing turbulent gas stream”. Bulletin of the American Physical Society. Nov, 2018.

Delin Jiang, DE Smith. “Topology optimization for 3D material distribution and orientation in additive manufacturing”, 2017 International Solid Freeform Fabrication Symposium, August 2017, Austin, Texas.

Jiang, D., & Smith, D. E. (2017). Predicting Short Fiber Composite Material Distribution and Orientation Using Optimization for Additive Manufacturing Applications. SPE ANTEC® Anaheim, 2017, 94-99.

D Jiang, DE Smith. “Mechanical behavior of carbon fiber composites produced with fused filament fabrication”, Solid Freeform Fabrication 2016: Proceedings of the 26th Annual International Solid Freeform Fabrication Symposium, August 2016, Austin, Texas.

See my Google Scholar link above.

Additional Education & Training

HVE Forum, virtual, 2022

PhotoMolder Collision Reconstruction Course

Northwestern Accident Reconstruction Course

Peer Reviews

Rapid Prototyping Journal

Computer and Fluids Journal