

Karl Jantze

U.S. Citizen

1281 Win Hentschel Blvd.
West Lafayette, IN, 47906



PROFESSIONAL EXPERIENCE

Chief Operating Officer (COO) of HySonic Technologies, LLC	Current
Research Engineer -- Raytheon Missiles & Defense – P.O. 420240952 <i>Research engineer executing technical services for Raytheon Missiles & Defense.</i>	2021-2022
Test Engineer -- Material Research & Design – P.O. AW37-HYS01 <i>Test engineer for ultrasonic material testing of carbon/metallic foam-based materials for MR&D.</i>	2021-2022
Principle Investigator -- Lockheed-Martin/Purdue Univ. – HySonic Subaward No. 40003290-014 <i>Aeroshell material development for hypersonic boundary layer transition delay.</i>	2020-2021
Principle Investigator -- Office of Naval Research (ONR) SBIR Phase I -- Contract No. N6833519C0312 <i>Designed ultrasonic absorption testing facility for passive control strategies for hypersonic boundary layers.</i>	2019-2020
Research Assistant in Thermoacoustics -- Ford Motor Co. -- Zucrow Propulsion Laboratories -- Phase I/II <i>Lead researcher for Phase I and Phase II thermoacoustic energy recovery research.</i>	2015-2022

EDUCATION

Purdue University, College of Engineering, West Lafayette, Indiana	
Doctor of Philosophy (Ph.D.) in Aeronautical Astronautical Engineering GPA: 3.22/4.00	2020-2025
Master of Science (M.Sc.) in Aeronautical Astronautical Engineering GPA: 3.33/4.00	2017-2019
Bachelor of Science (B.Sc.) in Aeronautical Astronautical Engineering GPA: 3.62/4.00	2013-2017

TECHNICAL EXPERIENCE

Software: C, CATIA V5, MATLAB, National Instruments LabVIEW, Python 2.0

High Pressure Plumbing and Instrumentation:

1. Trained to design pressure vessel systems integrating tubing, valves, actuators, relays up to 5,000 psia.
2. Trained to integrate high frequency instruments and data acquisition devices into experiments.

Signal Processing:

1. Trained to process/analyze high frequency and broad-band digital signals using filters/statistical methods.

GRADUATE RESEARCH

Maurice J. Zucrow Propulsion Laboratories	
Thermoacoustic Engine Project – Ford Motor Co. – Lead Researcher & Experimental Designer	2020-2022
<ol style="list-style-type: none">1. Designed modular traveling wave thermoacoustic engine for testing based on computational design.2. Experimentally verified the engine with a power output four times greater than the 2019 variant.	
Thermoacoustic Engine Project – Ford Motor Co. – Master of Science Thesis Project	2017-2019
<ol style="list-style-type: none">1. Designed modular standing wave thermoacoustic engine for testing based on theoretical principles.2. Achieved higher efficiencies than previously estimated using a novel fluid mixture.	

UNDERGRADUATE RESEARCH

Maurice Zucrow Propulsion Laboratories	
Research Engineer for Thermoacoustic Engine Project	2016-2017
<ol style="list-style-type: none">1. Designed traveling wave thermoacoustic engine for testing based on theoretical principles.	
Deutsches Zentrum für Luft- und Raumfahrt (DLR) – German Aerospace Center	2016
Research Engineer for Rotor Blade Dynamic Stall Experiment	
<ol style="list-style-type: none">1. Designed algorithm to analyze stereo pattern recognition data for helicopter rotor blade stall experiment.	