
Education

- Aug 2020 **Ph.D. Mechanical Engineering, Georgia Institute of Technology**, GPA 3.92
Thesis: *Evolution and Control of Coupled Flow Separation and Streamwise Vorticity Concentrations within Offset Diffusers*
Advisor: Dr. Ari Glezer
Minor: Computational Science and Engineering
- Dec 2018 **M.S. Mechanical Engineering, Georgia Institute of Technology**, GPA 4.00
- May 2014 **B.S. Mechanical Engineering, North Carolina State University**, GPA 3.63

Work Experience

- Sept 2020 - Present **Senior Member of Technical Staff, Charles Stark Draper Laboratory**, Cambridge, MA
- Member of a software team developing and maintaining models for software and hardware-in-the-loop simulation
 - Write software and hardware requirements for a real-time visualization system
 - Evaluate viability of commercial rendering software for integrating into real-time simulation
 - Parallelize in-house rendering software to GPU to meet software timing requirements
- Aug 2014 - Aug 2020 **Graduate Research Assistant, Georgia Institute of Technology**, Atlanta, GA
- Managed and operated a transonic wind tunnel facility, and conducted experiments
 - Designed flow control devices to modify serpentine diffuser internal flow structure for improvement of aircraft engine performance
 - Designed components, systems, and software for customized measurement techniques
 - Performed data processing, visualization, and analysis
 - Presented research at conferences and produced conference and journal papers

Technical Skills

- Software* LabView, CAD, Linux, Git, Gitlab, JIRA, Docker
- Languages* C, C++, Python, Matlab, Javascript, CUDA
- Libraries* MPI, OpenMP, Dask, Pandas, Tensorflow, D3
- Laboratory* Signal acquisition and processing, laser and camera optics, thermal and fluid sensors, particle image velocimetry, pressure-sensitive paint, experimental flow visualization

Journal Publications

- Aug 2021 **Active Control of a 3-D Flow Separation Induced by a Transonic Shock**
Travis J. Burrows, Bojan Vukasinovic, and Ari Glezer
Experiments in Fluids 62, 187
- Dec 2020 **Experimental and Numerical Investigation of Active Flow Control of a Serpentine Diffuser**
Travis J. Burrows, Bojan Vukasinovic, Ari Glezer, Matthew T. Lakebrink, and Mori Mani
AIAA Journal 2021 59:2, 607-620
- Feb 2019 **Control of Flow Distortion in Offset Diffusers Using Trapped Vorticity**
Travis J. Burrows, Bojan Vukasinovic, Matthew T. Lakebrink, Mortaza Mani, and Ari Glezer
International Journal of Heat and Fluid Flow, Volume 75, 2019

Conference Publications

- Jun 2020 **Controlled Flow Dynamics in a Serpentine Diffuser with a Cowl Inlet**
Travis J. Burrows, Bojan Vukasinovic, Ari Glezer, Matthew T. Lakebrink, and Mortaza Mani
AIAA Aviation 2020 Forum
- Jun 2019 **Control of a Transonic Shock in a Serpentine Diffuser using Surface Fluidic Actuation**
Travis J. Burrows, Bojan Vukasinovic, and Ari Glezer
AIAA Aviation 2019 Forum

- Jun 2018 **Flow Dynamics Effected by Active Flow Control in an Offset Diffuser**
Travis J. Burrows, Bojan Vukasinovic, and Ari Glezer
2018 Flow Control Conference, AIAA AVIATION Forum
- Jun 2017 **Fluidic Control of an Aggressive Offset Diffuser for a Supersonic Inlet**
Travis J. Burrows, Bojan Vukasinovic, and Ari Glezer
47th AIAA Fluid Dynamics Conference, AIAA AVIATION Forum
- Jan 2017 **Experimental and Numerical Investigation of Controlled Flow Distortion in a Subsonic Offset Diffuser by Trapped Vorticity**
Bojan Vukasinovic, Travis J. Burrows, Ari Glezer, Matthew T. Lakebrink, and Mortaza Mani.
55th AIAA Aerospace Sciences Meeting, AIAA SciTech Forum
- Jan 2016 **Investigation of Trapped Vorticity Concentrations Effected by Hybrid Actuation in an Offset Diffuser**
Travis J. Burrows, Zicheng Gong, Bojan Vukasinovic, and Ari Glezer
54th AIAA Aerospace Sciences Meeting, AIAA SciTech Forum