



The MSDS Capstone projects are educational in nature and intended to facilitate student learning by:

- using knowledge of Data Science methods acquired
- gaining experience working with real-world data
- interacting with sponsoring Data Science application researchers
- learning how to plan & organize their project work
- practicing communication skills both written and oral

Sponsor Information:

Company/Agency: Paal Research Group, Texas A&M University

Sponsor Contact: Dr. Stephanie Paal

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Email: sgpaal@tamu.edu Phone: 713-855-1543

Project Description (attach documents if needed):

Generalized post-disaster structural assessment: Currently, in the aftermath of any natural disaster, a team of qualified inspectors has to visit the site of the disaster and manually, visually inspect every individual structure. There have been various efforts to automate aspects of this evaluation. However, one remaining challenge is that the automation of assessments is carried out on a hazard-by-hazard and often, only for a single class of structures. In this project, we will work towards a unified (or generalized) prediction for the state of structures after a windstorm. Windstorms include tsunamis, hurricanes, and tornadoes. Additionally, to enhance the predictive nature of such a generalized model, we will utilize heterogenous data input sources (both the tabular data related to the hazard and structural characteristics) as well as associated images (to extract additional pertinent features not already accounted for in the tabular data).

Project Technical Support Team & Contacts:

Name: Stephanie Paal Title: Associate Professor

Phone: 713-855-1543 Email: sgpaal@tamu.edu

Name: Samuel Leach Title: PhD student

Phone: _____ Email: _____



Additional Project Questions

Please give a summary of data and data accessibility that will be used in this capstone project.

All data relevant to this project is publically available on the NSF NHERI DesignSafe-CI through the Data Depot.

The data consists of tabular data regarding the structural and damage characteristics of each structure as well as 0-3 correlated images per address.

Does the sponsor require a signed NDA? Yes___ No___☒

Does the sponsor allow for the listing of sponsors name/logo on the TAMIDS website? Yes___☒ No___

Does your project have any restrictions for international (non-U.S. Citizens)? Yes___ No___☒

May non-TAMU affiliates view your projects final presentation? Yes___☒ No___