

# 7a.005.UL\_UVA - A Cyberinfrastructure System for Real-Time Flood Forecasting in Low-Relief Coastal Plain Basins

## Project - Team

Team Member	Role	Email	Phone Number	Academic Sites/Industry Members
Emad Habib	PI	<a href="mailto:habib@louisiana.edu">habib@louisiana.edu</a>	(337) 482-6513	UL Lafayette
Khalid Elgazzar	Co-PI	<a href="mailto:elgazzar@louisiana.edu">elgazzar@louisiana.edu</a>	Not available	UL Lafayette
Mohamed Elsaadani	Researcher	Not available	Not available	UL Lafayette
Jon Goodall	Co-PI	<a href="mailto:goodall@virginia.edu">goodall@virginia.edu</a>	(434) 243-5019	University of Virginia
Peter Beling	PI	<a href="mailto:beling@virginia.edu">beling@virginia.edu</a>	(434) 982-2066	University of Virginia
Yawen Shen	Researcher /Student	<a href="mailto:ys5dv@virginia.edu">ys5dv@virginia.edu</a>	Not available	University of Virginia
Brian Miles	Project Mentor	Not available	Not Available	<b>Funded By: CGI</b>

## Project - Summary

Develop data and modeling-driven cyberinfrastructure for real-time flood forecasting in support of community resilience. This will result in scalable and transformative methodologies that can be adopted for other regions beyond coastal Virginia and Louisiana. The project takes advantage of recent advances in numerical modeling, hydroinformatics, cloud computing, and web-based visualization to translate real-time data and complex model simulations into useful information that can be directly used by public, local municipalities and emergency operation.

## Project - Novelty of Approach

1. Development and application of data analytics and visualization techniques in a “real-time” mode taking advantage of model simulations and data feeds from a variety of sources including real time sensors.
2. Application of innovative data analytics methods for processing and mining useful information from large-size datasets produced by the flood models
3. Producing general methods tested in two geographic regions but applicable more broadly beyond these two regions

## Project - Deliverables

Deliverable
1 Algorithms and workflows for coupling multi-resolution models to run in real-time on a scalable HPC infrastructure with elastic resource provisioning.
2 Algorithms for producing location-specific analytics based on smart sensors and model forecasts.
3 Innovative web-based visualization tools with a design relational database for storing, handling, and displaying real-time data streams from various complex forecast models.

## Project - Benefits to IAB

1. Produce case studies on the applications of innovative data analytics and real-time modeling for environmental applications
2. Demonstrate the deployment of rich data analysis and visualization technologies to design and operate cloud-based systems for disseminating flood forecasts.
3. Augment economic and business development initiatives with local governments and state

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## Spaces

- All Spaces

	CVDI 2017 IAB Fall Meeting				
	CVDI 2018 IAB Fall Meeting				
	CVDI 2018 IAB Spring Meeting				
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	CVDI Calendar				

agencies

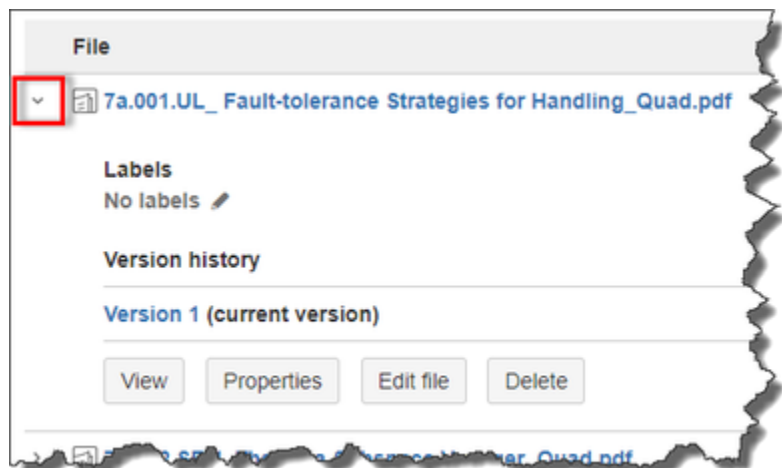
### Project - Presentation Video (Spring 2018)

[Video Link \(10:51 minutes\)](#)

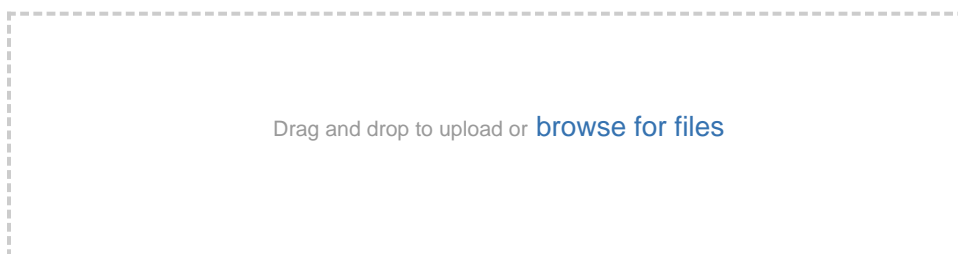
### Project - Documents

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File	Modified
>  7a.005.UL_UVA_A Cyberinfrastructure System Flood_Quad_2017 Fall Meeting.pptx	Nov 15, 2017 by Sally Johnson
>  7a.005.UL_UVA_CVDI UL Lafayette IAB Winter Meeting Presentation.pptx	Jan 30, 2018 by Sally Johnson
>  7a.005.UL_UVA_Quad Chart_2018 Spring Meeting.pptx	Mar 16, 2018 by Sally Johnson
>  7a.005.UL_UVA_Executive Summary_Revised after IAB Voting_UL Only.docx	Jun 25, 2018 by Sally Johnson
>  7a.005.UL_UVA_Executive Summary_Original.doc	Jun 25, 2018 by Sally Johnson
>  7a.005.UL_UVA_2018 Fall Meeting Poster.pptx	Nov 09, 2018 by Sally Johnson
>  7a.005.UL_UVA_Year 7_CVDI Mid-Year Report from UVA.docx	Jan 22, 2019 by Sally Johnson



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	CVDI SITE (University of Virginia)	+ ★ ☆
	IAB - Industry Advisory Board	+ ★ ☆
	Year 6 - Funded Projects (7/1/17 - 6/30/18)	+ ★ ☆
	Year 7 - Funded Projects (7/1/18 - 6/30/19)	+ ★ ☆
	Year 8 - Proposed Projects	+ ★ ☆

## Project - Comments

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