

# Hamza Elhamdadi

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**Objective Statement:** I am a data visualization researcher who focuses on fostering trust and understanding trust mechanisms in visualization-based decision-making.

**Research Areas:** Data Visualization, Visual Analytics, Trust Measurement, Human-Computer Interaction, UI/UX Design, Fluent Data Visualizations, Cognitive Science

## Education

<b>Ph.D. in Computer Science</b> , <i>University of Massachusetts Amherst</i> <i>Advisor:</i> Cindy Xiong, <i>GPA:</i> 3.51	2021-2025
<b>M.S. in Computer Science</b> , <i>University of South Florida</i> <i>Advisor:</i> Paul Rosen, <i>GPA:</i> 3.66	2020-2021
<b>B.S. in Computer Science, Minor in Mathematics</b> , <i>University of South Florida</i> <i>Advisor:</i> Paul Rosen	2016-2020

## Work Experience

<b>Data Visualization Researcher</b> , University of Massachusetts Amherst <ul style="list-style-type: none"><li>Investigates human trust formation and causes of distrust in data visualizations. Proposes comprehensive framework for measuring human trust in visual data communication</li><li>Designs interactive surveys and survey stimuli using Javascript, D3.js, Python, pandas, numpy, scikit-learn, scipy, and matplotlib</li><li>Uses Qualtrics and Prolific to run human-subjects studies, and analyzes the data using R, tidyverse, ggplot2 and lme4</li></ul>	2021-Present
<b>Topological Data Analysis Researcher</b> , University of South Florida <ul style="list-style-type: none"><li>Explored and contributed new methods for Explainable AI in Affective Computing using Topological Data Analysis</li><li>Used Python, Flask, scikit-learn, Javascript, JQuery, and D3.js to implement a pipeline for computing the similarity of time-series persistent homology</li></ul>	2019-2021
<b>IT Service Technician</b> , University of South Florida <ul style="list-style-type: none"><li>Provided technical support to students, staff and faculty via chat, email, phone, and in person</li><li>Utilized the ServiceNow and Jira incident tracking systems to manage and document user requests</li><li>Troubleshooted and resolved end-user application, operating system, and network-access issues</li></ul>	2018-2020

## Refereed Publications

<b>Vistrust: a Multidimensional Framework and Empirical Study of Trust in Data Visualizations</b> Elhamdadi, H., Stefkovics, A., Beyer, J., Moerth, E., Bearfield, C. X., Nobre, C. <i>IEEE Transactions on Visualization and Computer Graphics</i> , 2023.	Acceptance Rate: 25%
<b>AffectiveTDA: Using Topological Data Analysis To Improve Analysis And Explainability In Affective Computing.</b> Elhamdadi, H., Canavan, S., Rosen, P. <i>IEEE Transactions on Visualization and Computer Graphics</i> , 2021.	Acceptance Rate: 25%
<b>Recognizing Emotion in the Wild using Multimodal Data.</b> Srivastava, S., Lakshminarayan, S., Hinduja, S., Jannat, S.R., <u>Elhamdadi, H.</u> , Canavan, S. <i>International Conference on Multimodal Interaction (ICMI)</i> , 2020.	Acceptance Rate: 41%

## Workshop Papers

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**How Do We Measure Trust in Visual Data Communication?** Elhamdadi, H., Gaba, A., Kim, Y., Xiong, C. *IEEE VIS Beliv Workshop, 2022.*

**Using Processing Fluency as a Metric of Trust in Scatterplot Visualizations.** Elhamdadi, H., Padilla, L., Xiong, C. *IEEE VIS TREX Workshop, 2021.*

## Refereed Poster Presentations

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**How Do We Measure Trust in Visual Data Communication?** Elhamdadi, H., Padilla, L., & Xiong, C. *IEEE VIS Posters, 2022.*

## Conference Presentations

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Oct 2023 **VisTrust: a Multidimensional Framework and Empirical Study of Trust in Data Visualizations,**  
*IEEE VIS 2023, Melbourne, Australia*

Oct 2022 **How Do We Measure Trust in Visual Data Communication?,**  
*IEEE VIS 2022, Oklahoma City, OK*

Oct 2022 **Using Processing Fluency as a Metric of Trust in Scatterplot Visualizations,**  
*IEEE VIS 2022, Oklahoma City, OK*

Oct 2021 **AffectiveTDA: Using Topological Data Analysis To Improve Analysis And Explainability In Affective Computing.**  
*IEEE VIS 2021, New Orleans, LA*

## Teaching and Service

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Volunteer **Student Volunteering:** IEEE VIS 2023, IEEE VIS 2021

Teaching **COMPSCI 220: Programming Methodologies,** *University of Massachusetts Amherst*  
Graduate Teaching Assistant for Prof. Marius Minea and Prof. Jaime Dávila

## Mentoring Experience

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2021-2022 **Bhoomika Raj Ethakota** ESRP CS Student, *University of Massachusetts Amherst*  
PhD Supervisor for ESRP Project

2021-2022 **Erin Melia** ESRP CS Student, *University of Massachusetts Amherst*  
PhD Supervisor for ESRP Project

2021-2022 **Jocelyn Velazquez** ESRP CS Student, *University of Massachusetts Amherst*  
PhD Supervisor for ESRP Project

2021-2022 **Lily Thai Edmonds** ESRP CS Student, *University of Massachusetts Amherst*  
PhD Supervisor for ESRP Project

## Skills

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Front-End	ReactJs, TypeScript, Javascript, JQuery, Bootstrap, HTML, CSS
Back-End	Flask (Python), Heroku, Docker, Github, Gitlab
Database	MySQL, PostgreSQL
Machine Learning	PyTorch, Scipy, JAX, Tensorflow, Keras
Statistics	R, lme4
Data Visualization	D3.js, Tableau, ggplot2
Miscellaneous	Java, Hadoop, Scala, C/C++, LaTeX