

EDUCATION

University of Southern California	Los Angeles, CA
<i>Ph.D. in Computer Science; GPA: 4.0</i>	2020 - 2023
Dissertation: Scientific Workflows: Generation and Benchmarking	
California State University, Long Beach	Long Beach, CA
<i>Master of Science in Computer Science; GPA: 4.0</i>	2018 - 2020
Thesis: SharkID: A Framework for Automated Individual Shark Identification	
Universidade Federal de Itajubá	Itajubá, Minas Gerais, Brazil
<i>BS Computer Engineering</i>	2011 - 2016

EXPERIENCE

San Diego Supercomputer Center	San Diego, CA
<i>Schmidt AI in Science Postdoctoral Fellow</i>	Jan 2024 – Present
- Lead a team advancing scientific AI workflows, focusing on performance, accuracy, and reproducibility across large-scale data and compute systems.	
- Contribute to benchmarking efforts in collaboration with the WIFIRE Lab and Schmidt AI in Science Fellows.	
- Support grant writing to secure funding for research on scalable and reproducible AI in science.	
Lawrence Livermore National Laboratory	Livermore, CA
<i>Graduate Student Research Assistant</i>	Jan 2023 – Dec 2023
- Designed high-performance workflow components enabling GPU memory transfers and GPU Direct communication.	
- Developed primitives for modeling storage- and network-based communication patterns in scientific workflows.	
The Aerospace Corporation	El Segundo, CA
<i>Embedded Control Systems Graduate Intern</i>	May 2022 – Dec 2023
- Built and optimized pre-launch certification workflows for multiple launch programs.	
- Developed visualization and management tools to streamline workflow execution.	
- Automated legacy simulation components to improve reliability and reduce manual overhead.	

AWARDS & RECOGNITION

Rising Stars in Computational and Data Sciences	
<i>2023 Rising Stars in Computational and Data Sciences Workshop</i>	2023
Best Graduate Research Assistant Award	
<i>Viterbi Ph.D. Awards Ceremony</i>	2022

PUBLICATIONS

- [15] **Toward Agents of Intelligence: Bridging the AI Expertise Gap in Domain Sciences**
T. Coleman, I. Altintas
To show up at 5th Workshop on Reproducible Workflows, Data Management, and Security in conjunction with e-Science25
- [14] **A Terminology for Scientific Workflow Systems**
F. Suter, T. Coleman, I. Altintas, ..., R. Ferreira da Silva
Future Generation Computer Systems (FGCS), 2025. DOI: 10.1016/j.future.2025.107974

- [13] **WfCommons - a framework for enabling scientific workflow research and development (Tutorial)**
R. Ferreira da Silva, T. Coleman, F. Suter, H. Casanova
Humboldt University of Berlin, 2025
- [12] **BanditWare: A Contextual Bandit-based Framework for Hardware Prediction**
T. Coleman, H. Ahmed, R. Shende, I. Perez, I. Altintas
To Appear, AI4Sys @ Symposium on High-Performance Parallel and Distributed Computing (HPDC), 2025
- [11] **WfCommons - a framework for enabling scientific workflow research and development (Tutorial)**
R. Ferreira da Silva, T. Coleman, F. Suter, H. Casanova
IEEE International Conference on eScience, 2024
- [10] **Automated Generation of Scientific Workflow Generators with WfChef**
T. Coleman, H. Casanova, R. Ferreira da Silva
Future Generation Computer Systems (FGCS), 2023. DOI: 10.1016/j.future.2023.04.031
- [9] **WfBench: Automated Generation of Scientific Workflow Benchmarks**
T. Coleman, H. Casanova, K. Maheshwari, L. Pottier, S. R. Wilkinson, J. Wozniak, F. Suter, M. Shankar, R. Ferreira da Silva
IEEE/ACM PMBS, 2022. DOI: 10.1109/PMBS56514.2022.00014
- [8] **WfCommons: A Framework for Enabling Scientific Workflow Research and Development**
T. Coleman, H. Casanova, L. Pottier, M. Kaushik, E. Deelman, R. Ferreira da Silva
Future Generation Computer Systems, 2022. DOI: 10.1016/j.future.2021.09.043
- [7] **WfChef: Automated Generation of Accurate Scientific Workflow Generators**
T. Coleman, H. Casanova, R. Ferreira da Silva
IEEE International Conference on eScience, 2021
- [6] **A Community Roadmap for Scientific Workflows Research and Development**
R. Ferreira da Silva, H. Casanova, K. Chard, I. Altintas, R. M. Badia, B. Balis, T. Coleman, ..., M. Wolf
IEEE WORKS, 2021
- [5] **Evaluating Energy-Aware Scheduling Algorithms for I/O-Intensive Scientific Workflows**
T. Coleman, H. Casanova, T. Gwartney, R. Ferreira da Silva
International Conference on Computational Science, 2021. DOI: 10.1007/978-3-030-77961-0_16
- [4] **Workflows Community Summit: Bringing the Scientific Workflows Community Together**
R. Ferreira da Silva, H. Casanova, K. Chard, ..., T. Coleman, ..., J. Wozniak
arXiv:2103.09181, 2021
- [3] **Workflows Community Summit: Advancing the State-of-the-art of Scientific Workflows Management Systems Research and Development**
R. Ferreira da Silva, H. Casanova, K. Chard, T. Coleman, D. Laney, D. Ahn, ..., J. Wozniak
arXiv:2106.05177, 2021
- [2] **WorkflowHub: Community Framework for Enabling Scientific Workflow Research and Development**
R. Ferreira da Silva, L. Pottier, T. Coleman, E. Deelman, H. Casanova
IEEE WORKS, 2020. DOI: 10.1109/WORKS51914.2020.00012
- [1] **A Biometric for Shark Dorsal Fins Based on Boundary Descriptor Matching**
T. Coleman, J. Moon
CAINE (International Conference on Computer Applications in Industry and Engineering), 2019

PROJECTS

WfCommons (wfcommons.org)

An open-source toolkit for analyzing, synthesizing, and benchmarking scientific workflows

2020–Present

National Data Platform (nationaldataplatform.org)

A federated and extensible data ecosystem to promote collaboration, innovation, and use of data on top of existing cyberinfrastructure capabilities.

2024–Present