

# Data Science Transdisciplinary Area of Excellence

## Data Salon 2025 – 2026

### Echoes Amplified: A Study of AI-Generated Content and Digital Echo Chambers

Yu Chen, Electrical & Computer Engineering

Monday, Sept. 29, 2025, 12:15-1:15 PM

AD-148, with lunch served

Zoom Option: <https://binghamton.zoom.us/j/93495116544>



#### Abstract

This talk comprehensively analyzes how artificial intelligence (AI) shapes digital information ecosystems and contributes to the formation and intensification of echo chambers. We introduce ASCENT (AI, Social, and Cognitive Enhancement), a novel theoretical framework that systematically maps the multidimensional interactions between AI systems, human cognition, and social dynamics. The ASCENT model conceptualizes echo chambers as complex adaptive systems characterized by interconnected feedback loops operating across five components. A pilot case study examines the dynamics of misinformation about the COVID-19 vaccine, revealing how specific intervention strategies can mitigate the propagation of harmful content. Our findings indicate that strategic content removal was perceived as the most effective intervention approach. This research advances the theoretical understanding of AI's impact on information diversity while providing actionable guidance for platform designers, policymakers, and educators to foster healthier digital discourse environments. This talk is based on work that results from a DS-TAE Seed Grant awarded in AY 2024/25.

**About the speakers:** Dr. Yu Chen is a Professor of Electrical and Computer Engineering at the Binghamton University - State University of New York (SUNY). He received a Ph.D. in Electrical Engineering from the University of Southern California (USC) in 2006. Leading the Ubiquitous Smart & Sustainable Computing (US2C) Lab, his research interest focuses on Trust, Security, and Privacy in Computer Networks, including Edge-Fog-Cloud Computing, the Internet of Things (IoT), and their applications in smart and connected environments. Dr. Chen's publications include over 200 papers in scholarly journals, conference proceedings, and books. His research has been funded by NSF, DoD, AFOSR, AFRL, New York State, and industrial partners. He has served as a reviewer for NSF panels, DoE Independent Review panel, and international journals, and on the Technical Program Committee (TPC) of prestigious conferences. He is a Senior Member of IEEE (Computer Society & Communication Society) and SPIE, and a member of ACM and SIGMA XI.

**About the Data Salon:** Data Salon is a dynamic venue designed to foster the exchange of ideas and the formation of new collaborations. Each gathering includes a brief talk to inspire discussion, but the emphasis lies on the social dimension — creating an open and welcoming space where scholars, researchers, and practitioners can engage in dialogue, discover shared interests, and explore opportunities for collaboration. More than a lecture series, Data Salon is a catalyst for community-building and cross-disciplinary connection.