

## AAAI 2024 Fall Symposium Series

### Using AI to Build Secure and Resilient Agricultural Systems

**November 7-8, 2024**

#### *Timetable and Logistics – V 1.0*

**Thursday, Nov 7, 2024**

TIME	TOPIC	SPEAKER & Paper Title	Prog. Committee
9:00 am – 9:30 am	Welcome and Intro		Frank Stein, Feras Batarseh
9:30 am – 10:30 am	Keynote 1	Jonathan Braley, Director of Food and Ag Information Sharing and Analysis Center (ISAC)	Feras Batarseh, Introduction and Q&A
10:30 am – 11:00 am	Coffee Break		
11:00 am – 11:30 pm	Talk	Will Singer/ VT Introduction to the “Center for Advanced Innovation in Agriculture (CAIA) “	Feras Batarseh
11:30 am – 12:00 pm	Paper 1	#117: Souradeep Bhattacharya/Iowa State , “ML-based Anomaly Detection for CAN Bus-based Agriculture Machinery”	Will Singer
12:00 pm – 12:30 pm	Paper 2	#93: Song Li/VT “Towards an AI-driven cyber-physical system for closed-loop control of plant diseases”	Will Singer
12:30 pm – 2:00 pm	Lunch	Reservation at PF Chang? – right across the driveway under Frank’s name. Join us if you would like – each person orders/pays separately.	
2:00 pm – 2:30 pm	Paper 3	#119: Megan Baker/JHUAPL , “Continual Learning and Adaptation In Resource-Constrained Environments (CLAIRE)”	Zeb Bowden
2:30 pm – 3:00 pm	Paper 4	#89: Mohammad Rafid Ul Islam/Oregon State, “Self-attention-based Diffusion Model for Time-series Imputation”	Zeb Bowden
3:00 pm- 3:30 pm	Paper 5	#91: Usman Nazir/Beaconhouse National University , “2022 Flood Impact in Pakistan: Remote Sensing Assessment of Agricultural and Urban Damage”	Zeb Bowden
3:30 – 4:00 pm	Break		

4:00 pm – 4:30 pm	Paper 6	#88: Ioannis Kakardiari/UH, “An Intelligent System to Support Equitable and Resilient Food Distribution During Disasters”	Feras
4:30 pm – 4:50 pm	Paper 7	#115: Ragul Seetharaman/VT, “Enhancing Cybersecurity in Smart Agriculture: A Novel Approach Using Deep Autoencoders and Large Language Models for Intrusion Detection”	Feras
5:00 pm – 5:30 pm	Paper 8	#11: Feras Batarseh/VT, “Towards Water Systems Security and Sustainability using Deep Learning”	Frank
5:30 pm – 5:50 pm	Talk	Feras Batarseh/VT Introduction to the “AI & Cyber for Water & Ag (ACWA) Lab “	Frank
5:50 pm – 6:00 pm	Wrap-up	Wrap-up Day 1 and Plan for Day 2	Frank
6:00 pm – 7:00 pm	Reception		

### Friday, Nov 8, 2024

TIME	TOPIC	SPEAKER	Prog. Committee
9:00 am – 9:15	Welcome Back		Frank Stein, Feras Batarseh
9:15 am – 10:00 am	Keynote	Christopher Alvares, Chief Data Officer, USDA (Invited)	Frank Stein
10:00 am – 10:30 am	Talk	Introduction to Foundation Models in Agriculture:	Feras Batarseh
10:30 am – 11:00 am	Break		
11:00 am – 12:30 pm	Panel Discussion	Foundation Models for Resilient Agriculture: Moderator Raghu Machiraju/OSU ICICLE Co-PI <ul style="list-style-type: none"> <li>- Johannes Schmude/IBM Research</li> <li>- Raju Vatsavai/NC State &amp; AI-CLIMATE</li> <li>- Chinmay Hegde/NYU &amp; AIIRA</li> <li>- Abhishek Roy/Cargill</li> <li>- Jiajia Li/MSU</li> </ul>	Shawn Haag/UMN & AI-CLIMATE
12:30 pm – 2:00 pm	Lunch	TBD - Reservation at Hotel Restaurant downstairs – Please be back by 2:00 pm	

2:00 pm 2:45 pm	Panel Discussion	Introduction to the AI-Ag Institutes: <ul style="list-style-type: none"> <li>- AI-CLIMATE – Shawn Haag, Exec Dir, UMN</li> <li>- AIIRA – Baskar Ganapathysubramanian, PI /Iowa State (Remote)</li> <li>- AIFS – Steve Brown, Assoc Director, UC Davis</li> <li>- AI-FARMS – Girish Chowdhary, Professor U of ILL</li> </ul>	Moderator: Steven Thompson/NIFA/USDA (Invited)
2:45 pm – 3:30 pm	Panel Discussion	Institutes’ Cross-Cutting Issues to Drive More Secure and Resilient Agricultural Systems: (e.g., grand challenges, funding, ...) <ul style="list-style-type: none"> <li>- AI-CLIMATE – Shawn Haag, Exec Dir, UMN</li> <li>- AIIRA – Baskar Ganapathysubramanian, PI /Iowa State (Remote)</li> <li>- AIFS – Steve Brown, Assoc Director, UC Davis</li> <li>- AI-FARMS – Girish Chowdhary, Professor U of ILL</li> <li>- Fatima Boukari, Assoc. Professor, Delaware State University</li> </ul>	Moderator: Gulnihal (Rose) Ozbay/ Assoc. Dean of Coop. Ext. & Research Professor, Delaware State U.
3:30 pm – 4:00 pm	Break		
4:00 pm – 4:45 pm	Industry Keynote	Abhishek Roy, Cargill North America Leader of AI	Yiming Feng
4:45 pm – 5:30 pm	Panel #3 or Invited talk  Discussion	AgTech – Innovation with AI for Ag: Lars Dyrud, CEO of EarthOptics	Frank Stein
5:30 pm – 6:00 pm	Workshop Discussion & Readout Prep	ALL – Create several slides summarizing our symposium	Presenter to be selected at session (can’t be a PC member)
6:00 pm – 7:30 pm	Plenary Session (with our Readout)		

**Saturday, November 9, 2024**

Version 1.0 October 14, 2024

TIME	TOPIC	Facilitator
9:00 am – 10:30 am	Nothing Planned	
10:30 am – 11:00 am	Break	

## **2024 Program Committee**

### **Chairs:**

- Feras A. Batarseh (Chair), Associate Professor, Department of Biological Systems Engineering & Commonwealth Cyber Initiative, Virginia Tech, batarseh@vt.edu
- Frank Stein (Co-Chair), Research Faculty, Intelligent Systems, National Security Institute, Virginia Tech, fstein@ieee.org

### **Steering Committee:**

- Kang Xia, Director, Center for Advanced Innovation in Agriculture (CAIA), Virginia Tech, kxia@vt.edu
- Manimaran Govindarasu, Professor, Electrical and Computer Engineering, Iowa State University, gmani@iastate.edu
- Melissa Hatton, Capgemini Government Solutions, melissa.hatton@capgemini-gs.com.
- Jim Spohrer, ISSIP BOD Member, spohrer@gmail.com.
- Matt Wolfe, Vice President of Technology, Virginia Tech Applied Research Corporation, matt.wolfe@vt-arc.org.
- Zeb Bowden, Director, Division of Technology Development and Deployment, Virginia Tech Transportation Institute, zbowden@vt.edu
- Monowar Hasan, Assistant Professor, School of EECS, Washington State University, monowar.hasan@wsu.edu

### **Scientific Committee:**

- Shana Moothedath, Assistant Professor, Electrical and Computer Engineering, Iowa State University, mshana@iastate.edu
- Brian Steward, Professor, Agricultural and Biosystems Engineering, Iowa State University, bsteward@iastate.edu
- Josh Detre, Director, Health, Food, and Agricultural Resilience, Purdue Applied Research Institute (PARI), ddetre@hotmail.com

- Nicholas Guise, Chief Scientist, CIPHER Lab, Georgia Tech Research Institute (GTRI),  
Nicholas.Guise@gtri.gatech.edu
- Yimeng Feng, Assistant Professor, Department of Biological Systems Engineering, Virginia Tech,  
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- Will Singer, Center for Advanced Innovation in Agriculture (CAIA), Virginia Tech,  
wilmsing@vt.edu
- Jennifer Sleesman, Sr. AI Researcher, Johns Hopkins University JHU/APL, jsleem1@umbc.edu
- Lav Khot, Associate Professor, Washington State University (WSU), lav.khot@wsu.edu