



# Innovations & Solutions for Today's Challenges

Hosted at Utah State University



## i-ETC May 13th & 14th, 2024

Intermountain Engineering, Technology and Computing (i-ETC.org) Conference provides a forum for interaction among students, faculty, and industry. As contributors in the technology fields of engineering, technology, and computing, we join together to present research, product technology demonstrations, and advances in higher education.

Attendees will learn about current research, and industry best practices for digital product design, development, testing, deployment, and operation.

i-ETC is supported by Utah State University (USU), Brigham Young University (BYU), Utah Valley University (UVU), and a number of Utah's technology industries located along Silicon Slopes.

### Sponsorships:

We welcome sponsoring donations from industry and academic institutions. In addition to recognition on the conference website, sponsors meeting minimum levels will be granted space in the conference area for a table or booth. For sponsorship information, please contact Stefan Harlan at [Stefan.Harlan@uvu.edu](mailto:Stefan.Harlan@uvu.edu)

## Call for Papers

Prospective authors from universities, research institutions, government agencies and industry are invited to submit a full paper electronically (<https://i-etc.org>) with a maximum of six pages.

Full papers are due by February 17th, 2024.

Papers that are presented at i-ETC 2024 will be published in the i-ETC 2024 conference proceedings, and posted in the IEEE Xplore Digital Library.

### Call for Posters

We invite undergraduate and graduate student researchers to participate in the student research poster competition. The best posters presented at the conference will receive nominal cash prizes. Abstracts of Posters are due March 29, 2024.

Abstracts of posters presented at the conference will be published in the i-ETC 2024 conference proceedings.

### Panel Sessions/Tutorials and Technical Sessions

Prospective organizers of special sessions, panel sessions, tutorials sessions, and technical sessions are invited to submit their proposals by February 17, 2024.

## Registration

One-Day <b>\$100</b>	Student <b>\$50</b>	Participant <b>\$150</b>
Industry Participants	4/19/24 Early Bird Registration	4/19/24 Early Bird Registration

Full participant registration fee is \$200 (\$150 early), and \$80 per full-time student participant (\$50 early), or one-day conference registration is available for industry participants at \$100. Early bird registration deadline is April 19, 2024.

### Student Paper Awards

There will be up to 9 student paper and poster awards.

Conference Chair

John Edwards (USU)

• [john.edwards@usu.edu](mailto:john.edwards@usu.edu)

Conference Secretariat

• [ietc@uvu.edu](mailto:ietc@uvu.edu)



## ENGINEERING TRACK

### Energy Systems

Smart Grid; Power Systems Operation & Planning; Sustainable & Renewable Energy Systems; Power Electronics; Electromechanical Energy Conversion & Storage; Energy Consumption Modeling & Optimization; Energy & Environmental Engineering.

### Signal/Image Processing & Control

Smart Manufacturing & Automation Systems; Intelligent Robot Systems; Artificial Intelligence; Machine Learning & Neural Networks; Sustainable Manufacturing; Manufacturing Process Monitoring and Control.

### Communication & Computer Engineering

5G and 6G wireless communication technologies, computer architecture & high-performance computing, VLSI & low-power design, robotic systems, Internet of Things (IOT).

### Electronics & Circuits

Smart Circuits & Systems; VLSI Design; Nanomaterials & Nanotechnology; Optical Communication.

### Mechanical Engineering

Heat Transfer; Fluid Mechanics; Thermodynamics; Mechanisms & Robotics; Mechanical Design; Mechanics & Mechatronics.

### Material Science & Engineering

Smart Materials; Innovative Engineering Materials; Materials Design & Applications; Composite Materials Science & Technology; Nanomaterials; Materials & Manufacturing Engineering.

### Civil & Environmental Engineering

Environmental Engineering; Water Resources; Water Resources; Hydraulic Information; Geotech, Water & Air Quality Studies; Instrumentation & Remote Sensing; Geographic Information Systems; Building Information Modeling; New Construction Materials; Sustainable Solutions and Practices; Transportation.

### Education Topics\*

Innovations & Solutions for Today's Challenges



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[www.i-etc.org](http://www.i-etc.org)

## TECHNOLOGY TRACK

### Technology Design

Architecture; Drafting; Surveying & Mapping; Drone Surveying; 3D Printing and Prototyping; UX Digital Product Design; Civil Engineering; Web & Digital Platforms; Human Centered Design; Mobile App; Accident Reconstruction.

### Digital Media

Digital Animation; Game Development, Digital Cinema Production; Cinematography; Directing; Post-Production; Digital Photography; 360° Photography & Video; Digital Audio; Music Editing & Production. Home Automation & Internet of Things (IOT); VX Voice Experience Design & Development; Digital, Web, Interface & Experience Design;

### Information Technology

Networking and Data Communications; Cybersecurity; Network Administration & Security; Virtualization; Automated Testing & Monitoring; Computer Forensics & Security; Healthcare Information Systems; Management Project Management; Product Management; Facilities.

### Aerospace Technology and Management

Propulsion Systems; Fixed Wing, Helicopter, Advanced Air Mobility, UAS, Space Vehicle Technology; Maintenance Concepts; Technician Training; Safety Management; Airline & Airport Operations, Route Planning; Aviation Business Management; Aviation Business Management; Security; Flight Training; Corporate and Airline Pilot Operations.

### Industrial Automation, Power and Control

Designing & Maintaining Automated Systems & Machines; Control System Programming; Protecting Critical Cyber Systems; Robotics in Manufacturing; Integrating Automation Solutions; Automated Safety Systems; Power System Protection & Control Solutions; Electrical Safety & Arc-Flash Hazard Reduction; Smart Sensors & Industrial Internet of Things (IIOT).

### Transportation & Automotive

Diesel Systems; Automotive Technology; Collision Repair; Power Sport, Street Rod; Vehicle Electrification.

### Mixed Reality

Augmented Reality; Virtual Reality; Hybrid Reality; Mixed Reality Visual and Audio; MR Simulations; 3D Modeling; Training Simulations; Drone Surveying and Automation.

### Technology Management;

Business Intelligence Systems; Production and Operations Management; Project Management; Quality Control, Safety and Health Issues, and Statistics.

### Education Topics\*

## COMPUTING TRACK

### Computing Trends

Database Systems; UX and Visualization; e-Business, e-Learning & e-Government; Modeling & Simulation; Data Science; Computing Education & Recruitment; Computing Frontiers.

### Software Engineering

Software Design and Design Patterns; Software Reliability, Safety & Security Methods; Software Engineering Methodologies; Software Testing; Evaluation & Analysis Technologies.

### Medicine & Healthcare

Bioinformatics; Health Informatics; Biomedical Engineering & Sciences; Medical Image Processing & Object Recognition.

### Intelligent Systems

Artificial Intelligence; Machine Learning & Deep Learning; Cognitive Computing; Information & Knowledge Engineering; Data Mining; Computer Vision & Pattern Recognition.

### Security & Communication

Privacy; Internet Security; Cryptography; Secure Storage and Transactions; Parallel & Distributed Computing; Internet of Things; Wireless/Mobile Communication; Cloud Computing.

### Education Topics\*

#### \*Additional Education Topics in Each Track

### Capstone Projects/Undergraduate Research

#### Education

Effective Teaching Activities; Interdisciplinary Education; Engaging Undergraduate Students in Research; Industry & Education Collaboration.

#### Technology in Teaching and Learning

Innovation Strategies; Infrastructure Technologies; Online & Distance Learning; Smart Classrooms; Virtual & Remote Labs; Game-Based Learning.

#### Accreditation and Assessment

Curriculum Design & Development; Accreditation & Quality Control; Retention & Support Strategies; Educational Innovation, Role of Laboratories.

#### Diversity and Inclusion Issues

Academic Leadership, Diversity, & Inclusion; Assessing Diversity & Inclusion Programs; Skills Development & Competencies; Retention of Women & Gender Equality.