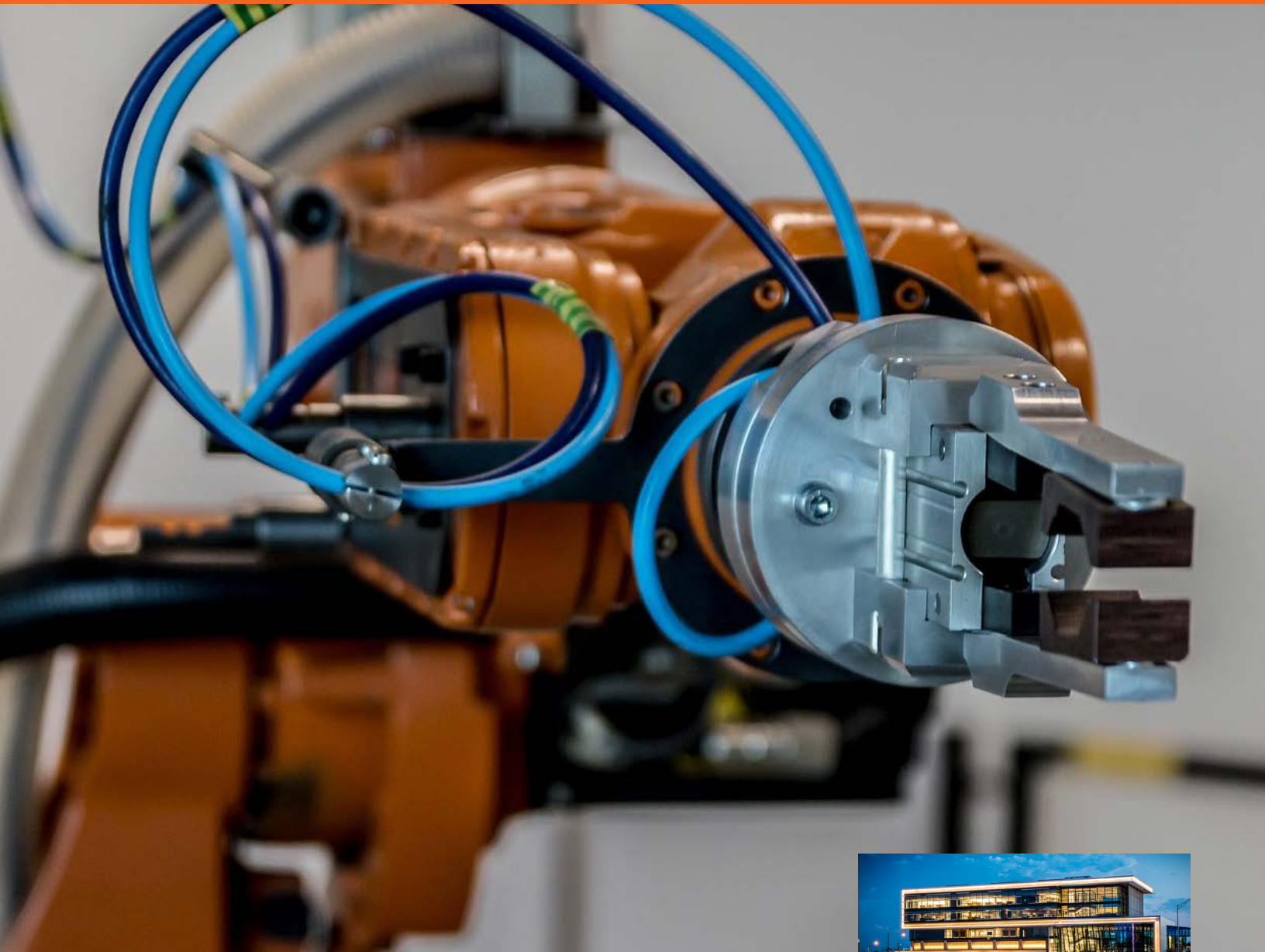


2023 INTERNATIONAL MECHATRONICS CONFERENCE AND EXPOSITION

IN PARTNERSHIP
WITH BOEING

9/27-9/29/2023 (Pre-conference workshop on 9/27/2023)



This Mechatronics conference is motivated by the demand for a multi-disciplinary workforce in industry. The conference brings together academic professionals and industrial experts in mechatronics, robotics, and other electromechanical fields. It is designed to provide an opportunity to stay current in this rapidly growing field and to network with like-minded colleagues.



LOCATION

**Hamm
Institute for
American
Energy**

300 NE 9th St,
Oklahoma City, OK 73104

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KEYNOTE SPEAKERS



Ryan Britton
Boeing

Ryan Britton is Vice President of Bombers and AWACS as well as the senior site executive for Boeing Oklahoma City within Boeing Defense, Space and Security. He is responsible for technical, quality, cost and schedule performance of some of Boeing's most complex military derivative, modification and upgrade programs to include the

B-1, B-2 and B-52 Bombers, E-3 AWACS, and ALCM. Britton joined The Boeing Company in August 2021 after serving 30 years in the United States Air Force.

Prior to Boeing, he held multiple senior positions acquiring, developing operating and sustaining vital aircraft and missile systems. Britton was the Air Force Program Executive Officer for Presidential & Executive Airlift, supporting the most senior leaders in the White House, Congress and Department of Defense. He served as the director of Global Reach and Global Power Programs, Office of the Assistant Secretary of the Air Force for Acquisition, Technology and Logistics, where he was responsible for the fighter, bomber, nuclear, weapons, mobility, special operations, trainer, and special mission aircraft portfolios. He also previously served as the Missile Defense Agency deputy director for Acquisition, the director of the ICBM Systems Directorate and deployed as the Liaison Officer to the Iraqi Minister of Defense in Baghdad.

Britton has been recognized as both the Office of the Secretary of Defense and the United States Air Force Program Manager of the Year as well as with the Air Force Association General Welch Award for the most significant impact to the Air Force nuclear mission. In addition to his Bachelor of Science degree in Electrical Engineering from the University of Memphis, Britton received a Master's of Science in Electrical Engineering and a Master's of Science in Systems Engineering from the Air Force Institute of Technology. He holds Department of Defense Acquisition Corps Level III certifications in Program Management and Systems Planning, Research, Development and Engineering-Systems Engineering and is a RAND Fellow. Britton is a member of the Air Force Association.



Junmin Wang, Ph.D.
UT Austin

Prof. Junmin Wang is the Lee Norris & Linda Steen Norris Endowed Professor in Mechanical Engineering at the University of Texas at Austin. In 2008, he started his academic career at Ohio State University where he was early promoted to Associate Professor in September 2013 and very early promoted to Full Professor in June 2016. In 2018, he left Ohio State and

joined UT Austin as the Accenture Endowed Professor. He also gained five years of full-time industrial research experience at Southwest Research Institute (San Antonio Texas) from 2003 to 2008. Prof. Wang has a wide range of research interests covering control, modeling, estimation, optimization, and diagnosis of dynamical systems, especially for automotive, smart and sustainable mobility, human-centric automation, and cyber-physical system applications. Prof. Wang's research programs at UT-Austin and Ohio State University have been funded by federal agencies and industrial companies such as National Science Foundation (NSF), Office of Naval Research (ONR), Department of Energy (DOE), National Highway Traffic Safety Administration (NHTSA), Texas Department of Transportation, GM, Ford, Honda, Tenneco, Eaton, Ftech, Denso, and others.

Dr. Wang is the author or co-author of more than 360 peer-reviewed publications including 184 journal articles and 13 U.S. patents. He is a recipient of numerous international and national honors and awards including 2019 IEEE Best Vehicular Electronics Paper Award, 2018 IEEE Andrew P. Sage Best Transactions Paper Award, 2017 IEEE Transactions on Fuzzy Systems Outstanding Paper Award, 2012 NSF-CAREER Award, 2011 SAE International Vincent Bendix Automotive Electronics Engineering Award, and 2009 ONR-YIP Award. He is an IEEE Vehicular Technology Society Distinguished Lecturer, SAE Fellow, and ASME Fellow.

Dr. Wang received the B.E. in Automotive Engineering and his first M.S. in Power Machinery and Engineering from the Tsinghua University, Beijing, China in 1997 and 2000, respectively, his second and third M.S. degrees in Electrical Engineering and Mechanical Engineering from the University of Minnesota, Twin Cities in 2003, and the Ph.D. degree in Mechanical Engineering from the University of Texas at Austin in 2007.

PANELISTS

Mr. Justin Patterson, Engineering Director, Nordam
Mr. Dean Guy, former Engineering Manager at Boeing
Mr. Josh Baldrige, Director, Enovation Controls
Mr. Jim Falasco, Sales Engineer, AeroGear Telemetry, Sachse, TX
Prof. Thomas Henderson, Science & Mathematics, TCC
Dr. Chulho Yang, Interim Head, Engineering Technology, OSU
Dr. Avimanyu Sahoo, Assistant Professor, U of Alabama, Huntsville

CALL FOR PRESENTATIONS



If you would like to present your research at the conference, you can submit a presentation using the QR code or link.

<https://tinyurl.com/2p86e2ts>

Due Dates

- Sessions and Workshops | **March 31, 2023**
- Abstract Submission Deadline | **July 31, 2023**
- Acceptance Notice | **August 7, 2023**

Wednesday, September 27

8:00AM - Registration Opens

Preconference Workshops (offered concurrently from 9:00am-4:00pm)

- Geometric Dimensioning & Tolerancing (GD&T)
- Intro to Python

6:00pm - 9:00pm MET/EET Alumni Reception

Thursday, September 28

8:00am - Registration

9:00am - 10:15am Opening Remarks & Keynote - Ryan Britton | **Aircraft Modernization and Modification Defense, Space & Security**

10:15am - 10:30am Break

10:30am - 12:00pm Technical Sessions - Robotics, Control & Automation

10:30am - 12:10pm Technical Sessions - Application of Mechatronics

12:00pm - 1:10pm Networking Lunch

1:10pm - 3:10pm Dr. Huaxia Wang | **First-person Robotic Arm Control with Hand Motions in Virtual Reality**

2:10pm - 3:10pm Technical Sessions - Smart Adaptive Structures

3:10pm - 3:25pm Break

3:25pm - 4:55pm Technical Sessions - Mechatronics Application & Education

4:55pm - 5:10pm Closing Comments

5:10pm - 7:00pm Vendor Reception

CONFERENCE SCHEDULE

Friday, September 29

8:00am - Registration

8:30am - 9:45am Welcome & Keynote - Dr. Junmin Wang | **Mechatronics in Cyber-Humans-Vehicles System**

9:45am - 10:00am Break

10:00am - 11:00am Technical Sessions - AI/ML in Mechatronics

11:00am - 12:00 pm Dr. Amanda de Oliveira Barros | **Assertion-evidence Presentation Method workshop**

12:00pm - 1:00pm Lunch

1:00pm - 2:00pm Dr. He Bai | **Sensor Fusion in Autonomous Systems**

2:00pm - 3:00pm Technical Sessions - Smart Manufacturing/ Industry 4.0

3:00pm - 3:15pm Break

3:15pm - 4:15pm Panelist and Q&A

4:15pm - 5:00 Closing Ceremony

PRICES

Registrations may be canceled 5 business days prior to the start of the course and receive a full refund. Within 5 days prior to the start of the course, registrants who cancel will be responsible for 25% of the course fee. Registrants who fail to attend the course without any prior notification will be responsible for the full course fee. Substitutions may be made at any time without penalty prior to the course starting date. In the event OSU has to cancel a course, OSU will not be responsible for any cancellation charges assessed by airlines, travel agencies, or hotels. *Registration fees cover necessary training curriculum, course materials, breaks, lunches, and reception foods*

Early Bird Prices
Participant \$325
Student \$50

After July 1, 2023
Participant \$375
Student \$75

Vendor \$625, includes two Registrations, vendor booth, one 6 ft. table, & two chairs

2023 International Mechatronics Conference and Exposition

PRE-CONFERENCE WORKSHOPS

Hamm Institute for American Energy, Oklahoma City, OK
September 27, 2023 | Early Bird **\$350**; After 7/1/23 **\$395**

GEOMETRIC DIMENSIONING & TOLERANCING (GD&T) WORKSHOP 9am-4pm

Instructor



Dr. Chulho Yang received a Ph.D. degree in Mechanical Engineering from Purdue University as well as M.S. and B.S. degrees from Hanyang University in Korea. He also has a professional engineer (PE) license registered in Oklahoma. Before joining OSU in 2008, Dr. Yang acquired 11 years of industrial experience with ArvinMeritor technical center, IBM Korea, and KIA Motors R&D Center. Much of his work focused

on vehicle structure design/optimization, vehicle NVH test and development, CAD/CAM/CAE, and engineering consulting on design methodologies. He also received an "Innovation and Achievement Award" from ArvinMeritor, Inc., a "Best Paper Award" from the International Symposium on Advanced Material and Mechanical Application, and an "Outstanding Presenter Award" from the International Symposium on Green Manufacturing and Applications. He has performed research and published in the areas of mechanical system analysis and design, noise and vibration, experimental sensitivity analysis, structural dynamics and health monitoring, design optimization, biomechanics, and protective device/structure.

Description

Geometric dimensioning and tolerancing (GD&T) is a systematic method for defining and communicating engineering tolerances. GD&T can improve quality and reduce cost through enhanced producibility. In the current industry, GD&T is considered as one of the most critical and important skillsets for design, manufacturing, and quality control engineers. Modern GD&T inspection practice in industry has moved away from simple pass/fail gauging to usage of measurement equipment that produces numerical results. Therefore, it has become more important to know how to define numerical values to measure parts and report per the ASME standards. The concepts and theories on GD&T will be discussed, then how to examine parts for verification and how to create an inspection report according to ASME Y14.45-2021 will be practiced.

Intended audience

Any design/manufacturing/inspection engineers, engineering managers, engineering students, teachers or faculty members who are willing to learn GD&T technique and its applications.

INTRO TO PYTHON 9am-4pm

Instructor



Ellis Nuckolls received BS and MS degrees from Oklahoma State University. He is also a registered Professional Engineer in Oklahoma. For the past thirty-four years he has taught Electrical Engineering Technology at Oklahoma State University. Courses taught are primarily programming, data acquisition, and microcontroller interfacing. He spends his summers working in industry for Enviro Systems in Seminole, Oklahoma.

Description

Python is a general purpose programming language that has become one of the most popular languages in the past few years. One reason it has become so widespread is its versatility. Python can be used for everything from automating simple tasks to machine learning. It can be used for file I/O, numerical analysis, image processing, data base interface, graphical interfaces, network management, web design, machine learning, and much more. Python is available for Windows, Macintosh, and Unix. It has also been adapted for Android, IOS, and even some microcontrollers.

This course assumes no prior knowledge of Python and will begin with an introduction to the basic concepts and syntax. By the end of the course you should feel confident in your ability to use Python for and to continue your learning. This course won't make you an expert but it will give you a running start at becoming one.

Intended audience

Any engineers, managers, engineering students, or faculty who have heard of Python and want to know more about it. No prior experience is necessary.



Use the QR code or
click [here](https://tinyurl.com/2e75ymcs) to register

<https://tinyurl.com/2e75ymcs>



OKLAHOMA STATE UNIVERSITY EET AND MET ALUMNI REUNION AND RECEPTION

Join EET and MET alumni for a taco bar dinner, drinks and program updates, followed by an awards banquet.

Wednesday, September 27th | 6:00-9:00pm
Iguana Mexican Grill, 9 Northwest 9th Street, Oklahoma City



Contact Bonnie Kaiser-Gambill at
bonnie.kaiser@okstate.edu for more information

Attend the Mechatronics
Conference and the GD&T
Workshop while you are here!



DIVISION OF
ENGINEERING TECHNOLOGY
College of Engineering, Architecture and Technology



HOTEL BOOKING

Embassy Suites Oklahoma City Downtown

741 N. Phillips Avenue, Oklahoma City, Oklahoma 73104

Toll Free Reservations Line 1-800-445-8667

Group Rate: \$104 per night | Group Code: **ROB**

Room Block Group Cutoff Date: Monday, August 28, 2023

tinyurl.com/msw2444y

OKC ATTRACTIONS

Bricktown

Located just over a mile south of the conference, Bricktown offers a variety of dining and entertainment options.

bricktownokc.com



National Cowboy & Western Heritage Museum

A museum that collects, preserves and exhibits internationally renowned western art and artifacts.

nationalcowboymuseum.org



SPONSORSHIPS

Platinum \$5000

2 Registrations, Promotional Material, Expo Reception and a vendor booth & table.

Gold \$3000

2 Registrations, Promotional Material, Lunch Presentation, and a vendor booth & table.

Silver \$1500

2 Registrations, Promotional Material, Refreshment Break, and a vendor booth & table.

Copper \$300

Promotional Material

Contact bonnie.kaiser@okstate.edu for more sponsorship information

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General Conference Chair

Dr. Chulho Yang

Technical Committee

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