



## **Knowledge-based Automation for the Next Industrial Revolution**

**(presentation and tour)**

**Guest Presenter:**

**Aditya N. Das, Ph.D.**

**Lead, Autonomous and Intelligent Systems Division,  
University of Texas at Arlington Research Institute (UTARI) &  
Adjunct Professor, Department of Electrical Engineering,  
University of Texas at Arlington**

**plus other team members of the  
Autonomous and Intelligent Systems division at UTARI.**

**Dallas - Ft. Worth Chapter  
Thursday, October 13, 2016  
7:00am-7:30am: Breakfast & Networking  
7:30am-9:00am: Meeting and Tour**

**[Click here to register.](#)**

Both members and non-members must register to attend.

Since the DFW Chapter has not had chapter meetings for a few months, the next few chapter meetings will be free.

You will receive multiple invitations, regardless of whether you have already registered. Please do not register more than once!.

Joining the DFW Chapter mailing list to automatically receive meeting notices is always free. [Click here](#) to join the DFW Chapter mailing list.

See meeting logistics information below.

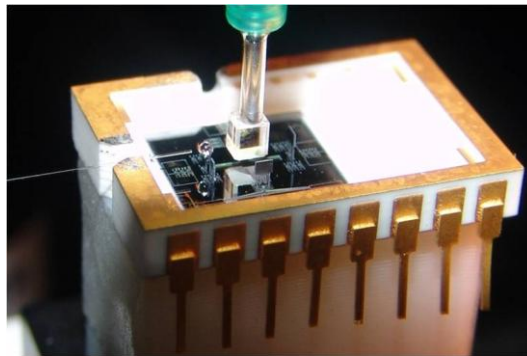
### **Become an A&D Forum Member**

A&D Forum member benefits include advance registration for tours, free attendance at chapter meetings, and access to member sections of the website.

[Please click here](#) to join the A&D Forum.

### **October 13, 2016 Meeting**

- Attire is business casual.
- Parking is free - located in front of the building.
- Please check-in on arrival.
- Bring a business card - they will be duplicated and copies of all attendee's cards will be available at the end of the meeting.
- Flyers and other material may be placed on the table designated for that purpose for pickup before and after the meeting. Please do not distribute anything during the meeting.
- Introductions will be minimal - your name, company, industry, and a 5 word "elevator speech". We encourage you to be creative!
- You are welcome to stay around and network and have refreshments after



**Knowledge-based Automation for  
the Next Industrial Revolution**

the meeting.

Feel free to pass this invitation on to others you think would be interested.

#### Event Info

Thursday, October 13, 2016  
Registration, Breakfast  
& Networking: 7:00-7:30 a.m.  
Meeting & Tour: 7:30-9:00 a.m.  
University of Texas at Arlington Research  
Institute (UTARI)  
7300 Jack Newell Blvd S  
Fort Worth, TX 76118

#### DFW Chapter Sponsors



#### A&D Forum Chapter Meetings

San Diego Chapter: **"Strategy: Is It Time for a Gut-Check?"**, Timothy Gendreau and Susan Wayo, The Gendreau Group, Sept 27, 5:30-7:45pm

Los Angeles Chapter: **Tom Fitzgerald**, Director of Engineering, Space and Missile Systems Center, Los Angeles Air Force Base, October 21 (webstreamed).

South Bay Chapter: **"What Aerospace Suppliers Need to Know About Cloud Computing"**, Aaron Johnson, Tribridge, October 13

Orange County Chapter: **"What the A&D Industry is learning from Automotive"**, Ryan Blanchet, Director of Supply Chain for Defense Electronics, Cobham plc., October 6

Arizona Chapter: **"How 8a Companies Survive in the Federal Market"**, Jonathan (Woody) Woodruff, President and CEO at ORSA Technologies, October 13

(presentation and tour)

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division  
at UTARI

Agenda:

- Meeting (Introductions, etc.)
- Presentation
- Tour: The tour will show (1) multi-robot cooperative control, and (2) modular hybrid manufacturing

Automation science in the post-renaissance era has revolutionized the manufacturing, operations, and services by making them faster, cheaper, better, and safer. Mobility and manipulability are the two widespread applications of robotic automation in the industrial era. Historically these domains have been treated separately, where the mobile robots are seen as the primary enablers of unmanned systems while robotic manipulators branch into the manufacturing sector. Only a few highly specific areas, such as mining and construction vehicles, specialty defense machines, witness the combination of both. Furthermore, these implementations require high skill

Note: A&D Forum members have first opportunity to sign up for tours. Signup for members is typically available about 3 weeks before the meeting.

### Dallas-Ft. Worth Chapter Steering Committee

- **Mr. Michael Shields**, Vice President, Safran North America Purchasing
- **Dr. Thomas Weber**, Strategy Manager, Raytheon
- **Dr. Micky McCabe**, Director, University of Texas at Arlington Research Institute
- **Mr. Craig J. Cox**, Partner, Bell Nunnally & Martin
- **Ms. Darlene Boudreaux**, Executive Director, Tech Ft. Worth
- **Mr. Chris Harris**, Business Development, GoEngineer
- **Mr. Mike McNair**, Automation and Intelligent Systems Division Head, UTARI
- **Dr. Ivan Rosenberg**, Co-founder and Executive Director, The A&D Forum

### The Executive Steering Committee of The Aerospace & Defense Forum

- **Michael Coburn**, CEO, All Metals Processing of Orange County
- **Peter Collins**, Director, Strategic Planning, Aerospace Group, Parker Hannifin Corporation
- **Alan McIntosh**, President, Verify, Inc.
- **Michael Boyle**, President, BOBsearch
- **Paul Weisbrich**, Managing Director, D.A. Davidson & Co.
- **Robert Jacobson**, Desert Sky Holdings
- **Ivan Rosenberg**, Co-Founder and Executive Director, The Aerospace & Defense Forum

### A&D Forum Executive Director

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human supervision and/or operation. Multi-robot cooperative operation is also a rarity in such areas. These issues warrant for new techniques for rapid deployment, accelerated training, and safe operations in multi-agent scenarios.

Additionally, increasing growth in today's product complexity and diversity, shrinking product life cycles, and intensifying cost competitions in the global market emphasize the need for new manufacturing paradigms that can swiftly and inexpensively adapt to the rapidly changing production demands. Such a radical shift from conventional rule-based automation to novel knowledge-based automation is best brought forth through flexible, intelligent, and cooperative robotics that can adapt to the varying system dynamics, planned and unplanned, and allow easy and quick reconfiguration of the manufacturing framework for on-demand production. Extremely useful in today's market, this approach is even more indispensable for the sustainability of rate-independent or low volume manufacturing, especially in early stages of new product development.

The on-going research and development in the Autonomous and Intelligent Systems division at the UT-Arlington Research Institute aims to bring in a disruptive transformation in the field of dynamic multi-robot deployment and control optimization and execution by finding the answers to the following questions:

- How to bridge the spatial and temporal gap among the different stake holders in an automation scenario?
- How to reduce the time to market and product training cycle by leveraging the already acquired skillsets?
- How to quickly and inexpensively repurpose available resources for multiple applications in an optimized fashion?

### **The Aerospace & Defense Forum**

is a global aerospace and defense leadership community of over 1600, providing opportunities for sharing of information, current events, and analysis, mutual support and encouragement, partnering, innovation, and performance breakthroughs.

[AerospaceDefenseForum.org](http://AerospaceDefenseForum.org)

### **Guest Presenter**



**Dr. Aditya Das** leads the Autonomous and Intelligent Systems division at the University of Texas at Arlington Research Institute, and also maintains a joint appointment as an adjunct professor in the Electrical Engineering department at University of Texas at Arlington. His current R&D focus includes flexible manufacturing, cooperative control, heterogeneous system

integration, rate-independent automation, miniaturization technology, instrumentation, and enhanced human-machine interface. Dr. Das has received over \$2 million in research grants and contracts. Dr. Das received his master's and doctorate degrees in electrical engineering from UT-Arlington in 2005 and 2009, respectively. Dr. Das is a senior member of IEEE. He has authored and coauthored 40 technical publications in international conferences, journals and articles, and 3 pending U.S. patents.

### **Recently Posted Presentation Recordings on the A&D Forum Website**

**"A Perspective on Working with SPAWAR"**, Ms. Nancy J. Gunderson, Director of Contracts, Space and Naval Warfare Systems Command, San Diego Chapter, July 26

**"Additive Manufacturing (3D Printing) Has Arrived!"**, Scot Thompson (West Area Account Manager, EOS of North America), Ivan Madera (Founder and CEO, Morf3D), Al Devile (Moderator) (CEO, SoCal Aerospace Group, Orange County Chapter, August 4

**"Farnborough 2016 International Airshow - Impressions & Opinions on the Show"**, David Conrad, Vice President, Sales; Marketing and Customer Support, Zodiac Aerospace Water & Waste, South Bay Chapter, August 10

**"Enabling a New Way of Doing Space"**, Dr. Jenny Gautier, Director of Commercial Programs, The Aerospace Corporation, Los Angeles Chapter, August 19

**Airshows: How to successfully navigate the "Flying Circus"**, Michael Shields, Vice President, Safran North America Purchasing, Dallas - Ft. Worth Chapter, September 8, 2016