



Robots, Automation and AI: Where Are We Today and Where Are We Going Tomorrow?

September 2024

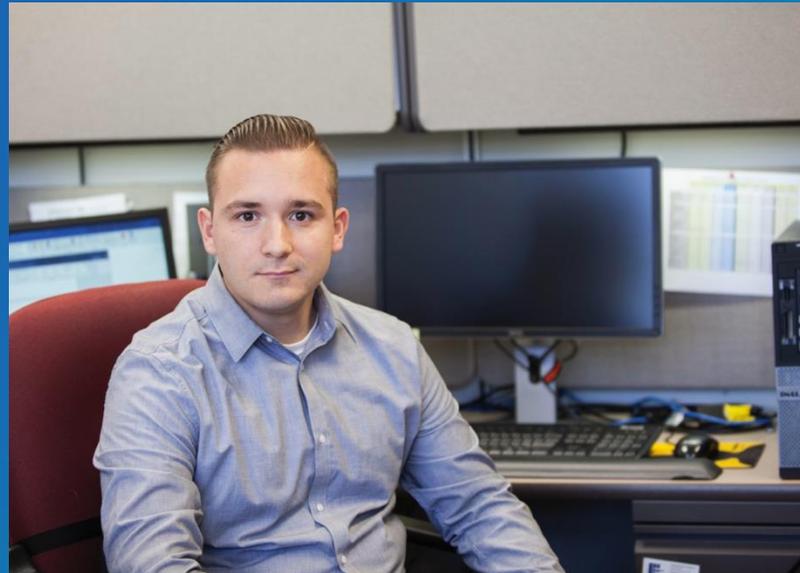


Smart Manufacturing Workforce Development Panel



Eric Sherrill

SMC



David Aguirre

Gateway Technical College



Paul Aiello

FANUC



Ritch Ramey

Director of Education

Association for Advancing Automation (A3)
900 Victors Way STE 140
Ann Arbor, MI, USA

Phone: +1 (740) 360-8156

Email: rramey@automate.org

LinkedIn: [linkedin.com/in/ritch-ramey-b4a75a20](https://www.linkedin.com/in/ritch-ramey-b4a75a20)



What is A3?



North America's Largest Automation Trade Association

We represent more than 1,300 organizations

- Robotics
- Artificial intelligence
- Machine Vision & imaging
- Motion Control & Motors
- Related Automation Technologies
- Safety Standards
- Education, Training and Workforce Development



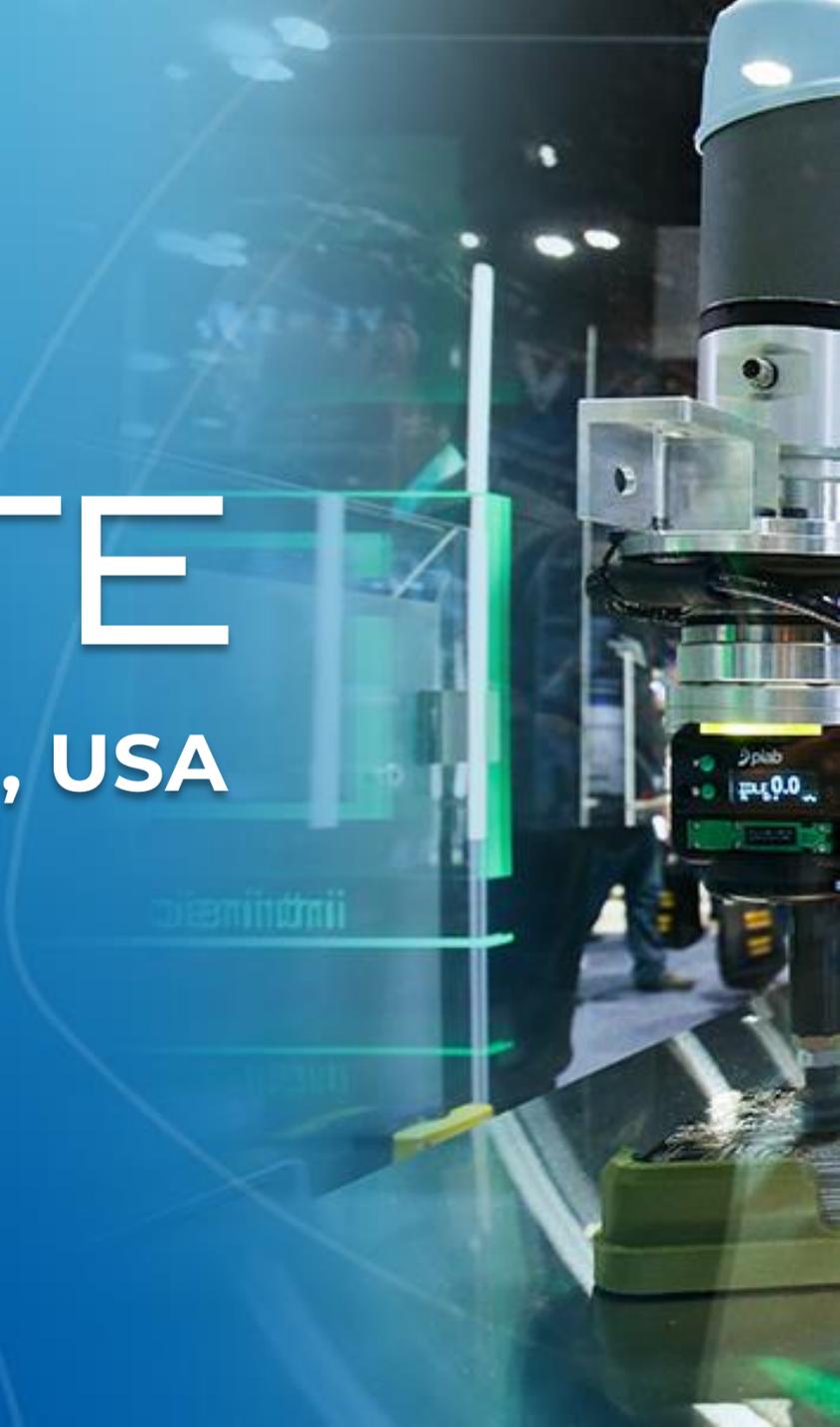
<https://www.automate.org>

North America's Largest Robotics
and Automation Trade Show

 **AUTOMATE**

May 12–15, 2025 • Detroit, Michigan, USA

REGISTER FREE
automateshow.com



Coming Soon! A3 Industrial Safety and Risk Assessment Course

Course Content Developed for Education

- *Blended Course*
- *Introduction to Safety Standards*
- *Overview of Robotic Process and Platforms*
- *Teacher Resources*
- *Industry Weblinks and Examples*
- *Safety Inter-Active Simulations*
- *Credly Badging*
- *Basic Risk Assessment Activities*
- *A3 Certificate of Awareness*



<https://www.automate.org>

A3 Industrial AI and Other Courses are free to Educators

Educational Member Benefits

Membership profiles: your institution will be labeled as an educational institution within our Members Companies

Insights: Access to quarterly industry statistics

Networking: Utilize the A3 membership network to connect with various industry professionals

Marketing: Utilize your company profile to promote educational member events, achievements, and recognition

Access to the Career Center: Ability to list available job opportunities in the industrial robotics and automation industries

Externships: Opportunities for teachers, tours, speakers and creating videos for specific educational projects and specialized curriculum

Discounts: 10% discount on booths at the Automate Show; 50% discount on educational conferences, trainings, and event registrations

Other member benefits: Speaking opportunities, best practice recommendations, career placement, volunteer opportunities

Membership for Educational Institutions \$350 Annually visit Automate.org

Free A3 Training Online Courses
Certified Vision Professional
Certified Motion Control Professional

NEW! RIA R15.08-1-2020

R15.08, American National Standard for Industrial Mobile Robots and Training course.



Free Case Studies > 700

A3 and Robotics and Automation Education Events

A3 Automation Boot Camp

July 22-23 on the Purdue Campus

Automate Educator Day

May 14th at Automate



- Networking
- Factory Tours
- Visit Purdue's New Mechatronics Facility
- Industry Leaders
- Grad Credits
- Housing Available
- Tour Automate
- Networking
- Industry Leaders
- Best Practices
- CEUs Available
- Automation Trends
- Workforce Development

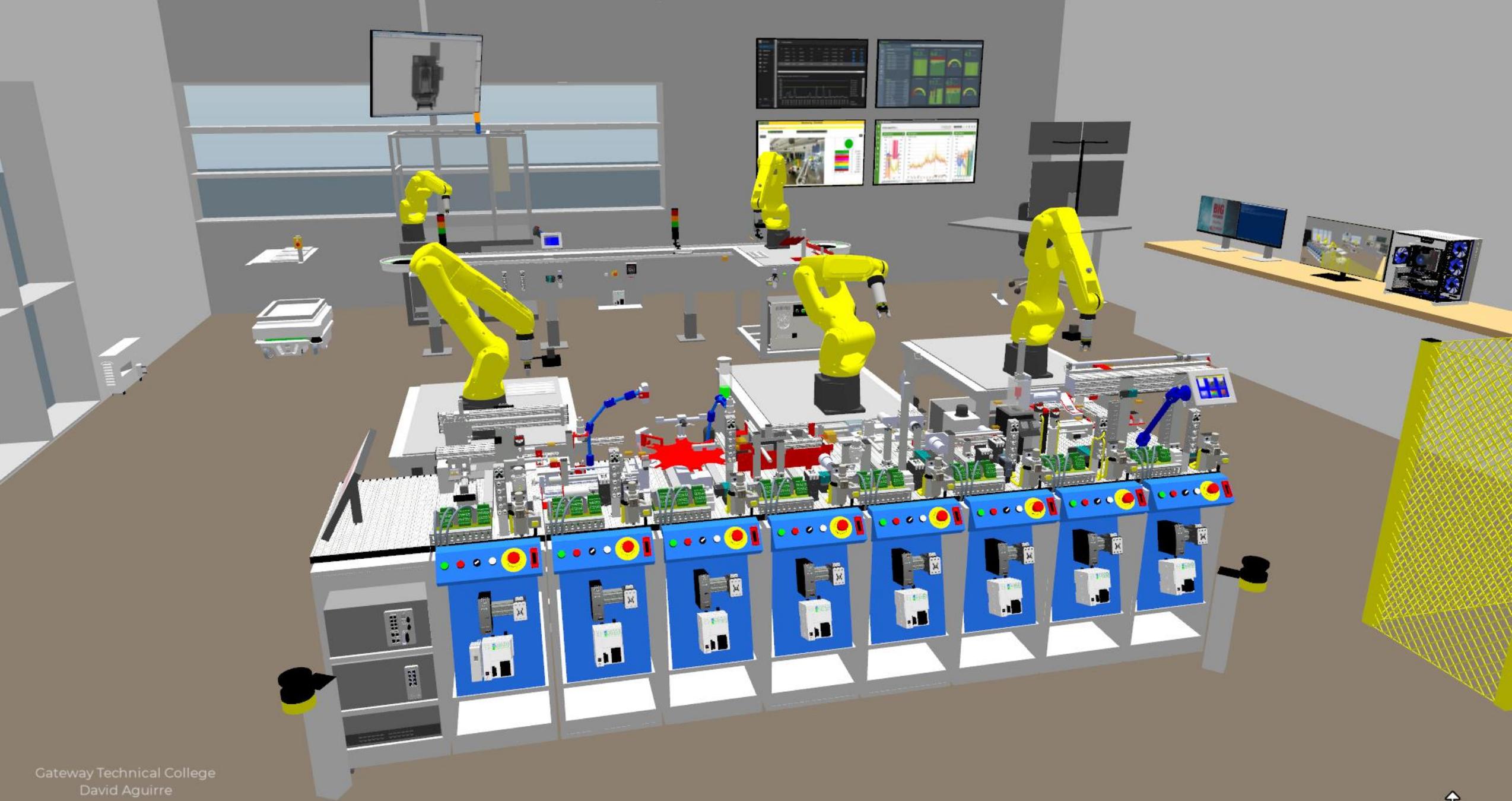


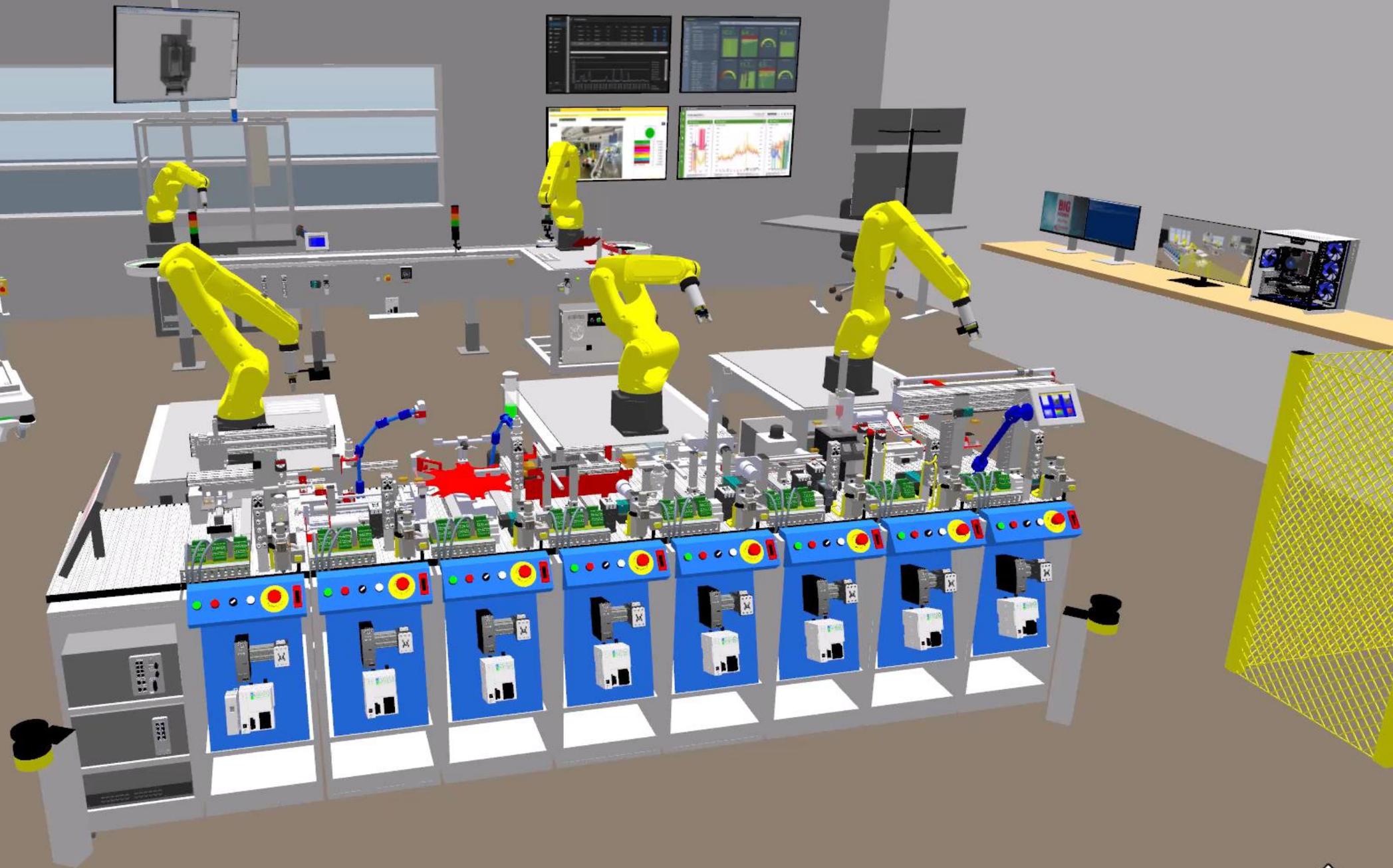


David Aguirre | Industrial Internet of Things | Association for Advancing Automation | 9









TOOLKIT

TECHNOLOGIES

Eric Sherrill

Managing Direct, Toolkit Technologies

eric@toolkittech.com
(512) 203-0590

<https://www.linkedin.com/in/ericwsherrill/>
www.toolkittech.com



OUR MISSION

Our mission is to foster the growth of our communities by championing career and technical education. We are dedicated to empowering learners to not only navigate but excel in the face of a rapidly evolving future.

Through a steadfast commitment to industry-driven skills and competency-based learning, we aim to cultivate a generation that is not only well-prepared, but actively contributing to the shaping of a more skilled and promising future for all within our communities.

OUR BUSINESS

Toolkit Technologies is a proud distributor of hands-on training systems, curriculum, and learning experiences for both education and industry.

Our training solutions are from Industry and for Industry, guaranteeing students are well-prepared for the needs of their future careers and dreams.



SMC is the world's #1 manufacturer of industrial automation and control technologies.

Our Business: The production and sale of automatic control equipment for industry, as well as sintered filters and various types of air filtration equipment.

Sales Network:

- 500 offices in 83 countries. 21,000+ employees

North American Headquarters:

- 2.6 million sq ft in Noblesville, IN

Production Plants:

- Factories in 30 countries.



Technical Development Centers:

- Japan, USA, Europe and China

**+38% global
market share**

(next closest competitor: ~17%)

ISO 9001, ISO 14001

Rating: AA R&I
(Rating and Investment
Information, Inc.)*



What students see in the **classroom** is what they will see in **industry**.

About: SMC is the global leader in manufacturing of pneumatic, automation and control technologies for industries.

Our **mechatronics** and **advanced manufacturing (Industry 4.0)** technologies are used by more Fortune 500 companies than any other provider in the industry.

\$36+ Billion Advanced Manufacturing and Industrial Automation manufacturer.

586
+

Global offices

28
+

U.S. offices

#1

Adopted by more Fortune 500 companies than any other provider

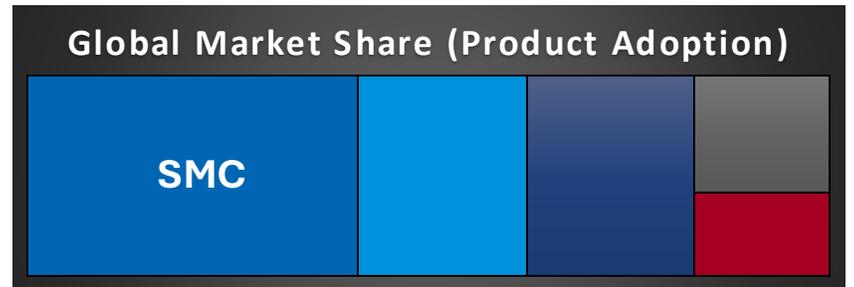
21,000 Employees

1,600 Engineers

29 Global Manufacturing Facilities

North American HQ: Noblesville, IN **2.6 million sq ft** with **1100** employees

38% Global Market Share





Something to Be Proud of

#1



#1 Manufacturer by Market Share

SMC is the world's largest manufacturer of automation and control technologies for industry.

SMC is synonymous with quality precision, and value and is relied upon by the world's biggest and most trusted brands.

Most Innovative Companies

SMC was **ranked #49th** in a global survey of the most innovative companies. Along with peers such as Apple, Google, Rockwell Automation, Siemens, etc., SMC heavily invests in R&D.

This further highlights SMC's strategic involvement within education, to ensure future generations are prepared for the technologies of the future.

World's Top 1000 Largest Companies

Forbes lists SMC as one of the top 1000 largest companies, as ranked by metrics such as Sales, Profits, Assets, and Market Value.

World's Best Employers

SMC is one of the best companies to work for according to an anonymous survey measuring employee satisfaction, economic impact, image, trust, gender equality, talent development, corporate social responsibility, culture, and benefits.



Relied Upon by Many

Companies of all sizes use and rely upon SMC for their automation needs.

Our Industries includes: ENERGY, LIFE SCIENCES, AUTOMOTIVE, SEMICONDUCTOR, MANUFACTURING, and FOOD + BEVERAGE

FANUC America

PAUL AIELLO



Industry & Education ALIGNMENT

Executive Director of Education | **FANUC** America Corporation
September 27, 2024

FANUC America Corporation

Headquartered in Rochester Hills, Michigan!



2.2 MILLION Square feet of
innovation



Who is **FANUC** America?

WE ARE EDUCATORS

Bridging the Skills Gap With Over 1600 Education Providers

FANUC is uniquely positioned to rally policy makers, industry partners, and academia to Align Industry and Education

- 1631 CERT Schools in the Americas
- 1592 Certified Instructors
- >40,000 Students introduced Annually
- >900,000 Experiences
- 12 States approved FANUC Robot and CNC Programming as a foreign language elective
- 14 states approved FANUC Robot programming as a math elective

Since 2009 FANUC has invested more than 85 Million Dollars into Educational Systems to help create the ***Automation Generation*** workforce.



1,600+ School Partners



More than any other factor
Experiences Shape Career Path Decisions



...We must invest in people by providing access to the Technology, Training & Certifications they need to succeed!



FANUC AUTOMATION ENDOWED SCHOLARSHIP FUND

FANUC

This newly announced scholarship will help support – in perpetuity – hundreds, and eventually thousands, of young people across the U.S. and Canada in their pursuit of a career in advanced manufacturing and automation.

Over the next four years, **\$1 million** will be provided by FANUC and its Authorized System Integrators and Education Solution Providers, funding an endowment that will ultimately make \$50,000 in scholarship awards annually.

Thank you to FANUC's Authorized System Integrators and Education Solution Providers



FANUC



Together we can inspire Tomorrow's
Innovators, Today!

Questions?

- 1. How can we best integrate emerging robotics and AI technologies into our current curriculum to prepare students for future industry demands?**
- 2. What specific skills or certifications should we prioritize to ensure students are ready for advanced automation jobs in the next 5-10 years?**
- 3. What challenges do you foresee in adapting traditional manufacturing processes to embrace AI and robotics, and how can education bridge the gap?**
- 4. How do you envision the role of humans evolving in highly automated and AI-driven manufacturing environments?**
- 5. What collaborative opportunities between education, industry, and government can accelerate the adoption of advanced technologies in manufacturing?**