

# **GEORGIA ARTIFICIAL INTELLIGENCE WORKFORCE REPORT**

Q1 2025 - AI Manufacturing Tech Workforce: Credential Requirements for Existing and Future Jobs

Integrating artificial intelligence (AI) in manufacturing transforms workforce requirements, demanding specialized credentials for current and emerging roles. AI-driven automation, predictive maintenance, and robotics integration reshape production processes, necessitating technical proficiency in AI-related skills. This report outlines the credentials required for existing and future manufacturing jobs, referencing academic and industry sources.

Manufacturing professionals today require foundational technical skills alongside AI competencies. AI-related certification and training programs in Georgia. As AI adoption accelerates, future manufacturing roles will require advanced AI expertise across several key areas.

# **Current Credential Requirements**

## 😼 Technical Colleges

**Central Georgia Technical College (CGTC)** offers an Alenhanced robotic Manufacturing Specialist program within its Industrial Systems Technology curriculum. Eligible students must be at least 16 years old, have a high school diploma or GED, and be 18 to receive program credit.

**Technical College System of Georgia (TCSG)** is launching Al manufacturing studios and innovation incubators across the state through the Georgia AIM initiative, including:

- Al Semiconductor Manufacturing Studio at Georgia
  Piedmont Technical College
- Al-enhanced Robotic Manufacturing Studio at CGTC
- Remote Plant Operations Studios at Lanier and
- Southern Regional Technical Colleges
- Innovation Incubators at Southern Regional, Wiregrass Georgia, and Lanier Technical Colleges

#### Southern Regional Technical College (SRTC) has

established an AI Manufacturing Lab, funded by Georgia AIM, to advance AI-driven manufacturing technology.



- **Georgia Tech** provides various AI-related courses and professional education opportunities, which are detailed at the Georgia Tech AI Hub.
- **Georgia State Universit**y offers an Artificial Intelligence Business Innovation Graduate Certificate through its Robinson College of Business.
- Middle Georgia State University is introducing a Bachelor of Science in Applied Artificial Intelligence starting in Fall 2025.

### Why It Matters

Knowing Al's current and future credentials in manufacturing is crucial for career growth and industry adaptation. As Aldriven automation and robotics reshape production, professionals need specialized skills to stay competitive. Certifications in Al-enhanced manufacturing, predictive analytics, and autonomous systems help workers advance while emerging credentials in Al ethics and digital twins ensure readiness for future innovations.

# Future Credential Requirements

#### **1. AI-Integrated Process Optimization**

• Engineers will need expertise in Al-powered predictive maintenance, ensuring machines operate efficiently with minimal downtime.

#### 2. AI-Enhanced Robotics & Automation

- Robotics engineers will design and maintain autonomous production systems that adapt to changing conditions.
- Al-powered collaborative robots (cobots) will work alongside human operators to improve efficiency.

#### 3. AI-Driven Supply Chain & Logistics

- Al specialists will optimize real-time inventory management, reducing waste and improving delivery times.
- Al-powered demand forecasting will help manufacturers anticipate market trends and adjust production accordingly.

#### 4. AI-Enabled Smart Manufacturing Systems

- Al engineers will develop self-learning manufacturing systems that adjust operations based on data insights.
- Al-driven digital twins will allow manufacturers to simulate and optimize production environments.

#### 5. AI & Human Collaboration

- Al trainers and ethicists will ensure responsible Al deployment, balancing automation with human oversight.
- Al-driven workforce augmentation will require professionals who can integrate Al tools into human workflows.
- Al is reshaping manufacturing, and professionals with Al expertise in automation, optimization, and human-Al collaboration will be in high demand.

### AI Manufacturing Credential Distribution by Industry



### **Providing Solutions**

**TAG Ed** supports STEM education, workforce development, and technology innovation across the state by collaborating with industry leaders and educational institutions to bridge skill gaps and prepare students for emerging tech careers. TAG offers certification courses, focusing on in-demand tech skills through online, instructor-led training.

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