Thomas Blackwood

Industrial Engineer

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- Industrial Engineer with hands-on experience in lean manufacturing implementation, reducing production cycle time by 18% during co-op placement at Meridian Automotive
- Proven expertise in statistical process control and Six Sigma methodologies, with demonstrated ability to identify bottlenecks and optimize workflows using data-driven analysis
- Strong technical proficiency in simulation software and ERP systems, combined with cross-functional collaboration skills developed through leading kaizen events and presenting findings to executive teams

WORK EXPERIENCE

Meridian Automotive Solutions

January 2023 - August 2023

Manufacturing Engineering Co-op

- Analyzed production line efficiency using time-motion studies across 4 assembly stations, identifying 6 bottlenecks that when addressed increased throughput by 18%
- Implemented 5S methodology in 15,000 sq ft warehouse section, reducing item retrieval time by 32% and improving inventory accuracy to 99.2%
- Designed Excel-based inventory tracking system with VBA macros, decreasing stock-out incidents by 45% and reducing manual data entry time by 3 hours daily
- Facilitated cross-functional kaizen events with production, quality, and maintenance teams, resulting in $85,000 annual cost savings through waste elimination
- Created value stream maps for 3 product lines using Visio, identifying $120,000 in potential savings through lead time reduction initiatives

Great Lakes Logistics

Summer 2022

Process Improvement Intern

- Conducted spaghetti diagram analysis of warehouse picking operations, discovering 40% of travel time was non-value-added movement
- Proposed zone picking system and new slotting strategy based on SKU velocity, reducing average pick time by 25% and increasing productivity by 30 picks per hour
- Assisted in implementing kanban system for MRO supplies, reducing work-in-process inventory by 35% and eliminating stockroom overstock
- Developed standard operating procedures for 8 warehouse processes, improving training efficiency and reducing onboarding time by 40%

University of Michigan

September 2022 - April 2023

Senior Design Capstone Project

- Led 4-person team in facility layout optimization for mid-size electronics manufacturer, analyzing material flow for 500+ SKUs using systematic layout planning methodology
- Designed alternative layout reducing material handling distance by 35% using AutoCAD, validated through discrete event simulation in Arena software
- Confirmed 20% throughput increase and 15% reduction in labor costs through comprehensive simulation modeling with 95% confidence interval
- Presented findings to company executives and university panel, with recommendations implemented in Q3 2023 resulting in $180,000 annual savings

EDUCATION

University of Michigan

May 2023

Bachelor of Science in Industrial Engineering

GPA: 3.7/4.0
Magna Cum Laude
Relevant Coursework: Lean Manufacturing Systems, Statistical Quality Control, Operations Research, Ergonomics and Work Design, Supply Chain Management, Production Planning and Control, Engineering Economics, Simulation Modeling
Senior Design Project: Facility Layout Optimization for Electronics Manufacturing
- Analyzed material flow patterns and designed new layout reducing handling distance by 35%
- Validated design through Arena simulation, confirming 20% throughput increase
- Project recommendations implemented by sponsor company with $180,000 annual impact

TECHNICAL SKILLS

CAD/Simulation: AutoCAD, SolidWorks, Arena Simulation, ProModel

Data Analysis: Minitab, R Programming, Advanced Excel (VBA, Solver, Statistical Functions, Pivot Tables)

ERP Systems: SAP MM Module (certified), Oracle SCM (academic exposure)

Statistical Software: SPSS, JMP, Statistical Process Control charting

Lean Tools: Value Stream Mapping, 5S Implementation, Kaizen Facilitation, SMED, Poka-Yoke

Quality Systems: Six Sigma DMAIC, Statistical Process Control, Design of Experiments

Analysis Methods: Time-Motion Studies, Root Cause Analysis (5-Why, Fishbone), Ergonomic Assessment

Planning Systems: Material Requirements Planning (MRP), Kanban, Production Scheduling

Cross-functional collaboration (worked with production, quality, and maintenance teams)

Data visualization and reporting (created executive dashboards for process metrics)

Root cause analysis facilitation (led 5-why sessions and fishbone diagram workshops)

Process documentation and standardization (developed SOPs and work instructions)

CERTIFICATIONS & PROFESSIONAL DEVELOPMENT

Six Sigma Green Belt Certification

March 2023

American Society for Quality (ASQ)

SAP MM Module Certification

August 2023

SAP Training Center

OSHA 10-Hour General Industry Safety

June 2022

U.S. Department of Labor

Lean Manufacturing Fundamentals

January 2022

SME (Society of Manufacturing Engineers)

AWARDS & RECOGNITION

Institute of Industrial and Systems Engineers (IISE) Outstanding Student Award

2023

IISE

- Recognized for leading campus sustainability project reducing cafeteria waste by 40% through process redesign
- Selected from pool of 200+ industrial engineering students nationwide

Dean's List for Academic Excellence

2021-2023

University of Michigan

- Fall 2021, Spring 2022, Fall 2022, Spring 2023
- Achieved while managing 25-hour/week co-op position at automotive manufacturer

University of Michigan Engineering Expo - First Place

2023

University of Michigan

- Senior Design Competition winner for "Smart Factory Layout Optimization" project
- Judged by industry professionals on technical merit and practical application

PUBLICATIONS & TECHNICAL WRITING

Implementing Lean Principles in Automotive Assembly Operations

May 2023

IISE Annual Conference Proceedings

- Co-author, IISE Annual Conference Proceedings, May 2023
- Presented findings showing 18% reduction in cycle time and 25% improvement in first-pass yield

Statistical Process Control in High-Mix Low-Volume Manufacturing

December 2022

University of Michigan Engineering Review

- Lead author, University of Michigan Engineering Review, December 2022
- Analyzed SPC implementation challenges and solutions for small-batch production environments

PROFESSIONAL AFFILIATIONS

Institute of Industrial and Systems Engineers (IISE)

2020-Present

Student Member (2020-2023), Professional Member (2023-Present)

American Society for Quality (ASQ)

2021-Present

Student Member (2021-2023), Associate Member (2023-Present)

Society of Manufacturing Engineers (SME)

2022-2023

Student Chapter Vice President (2022-2023)