

Mikayla E. Norton

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EMPLOYMENT EXPERIENCE

Data Scientist, Growth Analytics & AI – Humana

Sep 2025 – Present

- Designed and deployed LLM-driven evaluation frameworks for analyzing sales interactions, enabling automated detection of key behavioral signals, sentiment patterns, and customer-need alignment to improve agent performance insights at scale.
- Led end-to-end development of analytics pipelines using distributed processing, lexical/semantic search, and topic modeling, integrating timestamped conversational features, embedding-based retrieval, and model-validated classifications to uncover correlations between sales behaviors, call outcomes and operational KPIs.

Data Scientist, Supply Chain Enabling Solutions, Advanced Analytics – Intel Corporation

Aug 2024 – August 2025

- Pioneered data-driven solutions across various Intel divisions by developing and maintaining advanced generative AI, ETL pipelines, machine learning frameworks, and data harmonization processes, significantly enhancing image analysis, financial reporting, and supply chain management through automation and predictive analytics.
- Leveraged expertise in Python, R, and SQL to engineer robust data extraction, transformation, and loading systems, integrating cutting-edge technologies such as OpenCV, PySpark, and NLP, which streamlined operations, reduced manual processing time, and provided actionable insights for strategic decision-making.
- Spearheaded innovative projects such as "AI Assisted Digital Twins for Supply Chain" in collaboration with Arizona State University and Intel SMEs, transforming supply chain simulations with real-time digital twins and integrating Generative AI to optimize procurement processes and IT investments, setting a new standard for operational efficiency and predictive scenario analysis. [Published at WinterSim 2025](#).

Graduate Teaching Assistant, Applied Engineering Sciences Department – MSU

Jan 2024 – May 2024

- Collaborated with AESC 410, the Applied Engineering Sciences capstone, mentoring 7-8 teams of 5-6 students each on company-sponsored projects, guiding them through the process and ensuring preparedness.
- Facilitated the development and delivery of comprehensive presentations for the April "Design Day" event, focusing on cultivating student skills and project understanding.

Data Scientist, Supply Chain Enabling Solutions, Advanced Analytics – Intel Corporation

May 2023 – Dec 2023

- Utilized Python (pandas, numpy, pylightxl) as the project owner to meticulously extract and clean data from a vast dataset of 1000+ contracts. Developed a robust data pipeline to connect critical data keys, resulting in the identification of all invalid data points requiring correction. This meticulous effort led to a remarkable 10% improvement in return on spending, equivalent to approximately \$12 million in savings on construction funding requests.
- Designed and executed a comprehensive policy simulation using AnyLogic and Python, focusing on spare parts, direct materials, and indirect materials within the inventory management system. The simulation showcased optimized reorder points, order quantities, safety stock levels, and controlled inventory planning. This strategic initiative significantly enhanced inventory efficiency, reducing costs by 15% and improving overall operational performance.

Graduate Teaching Assistant, Statistics Department – MSU

Aug 2023 – Dec 2023

- Instructed a diverse group of approximately 70 non-statistics students in STT 380, a data science-focused statistics course, emphasizing fundamental concepts and methodologies in probability and statistics, with a strong focus on practical applications in R.
- Conducted engaging twice-weekly class sessions and provided valuable guidance through weekly office hours, facilitating students' proficiency in using statistical tools and techniques for data analysis within a data science framework.

Graduate Advisor, Lead Ambassador, Women in Engineering K-12 Outreach Office – MSU

Aug 2021 – Sep 2023

- Led teams of ambassadors to manage and facilitate events of 500+ attendees to educate and de-stigmatize engineering as a profession, especially for women.
- Analyzed data to produce annual impact reports of events, key schools and cities, and engagement of individuals per event.
- Cooperated in team settings with other ambassadors to organize events, strengthen interpersonal and professional skills, and develop a broader future engineering network for university.

Graduate Advisor, Girls Who Code & Technovation – MSU

Aug 2022 – May 2023

- Mentored and guided up to 10 cohorts of K-12 students from underrepresented backgrounds, resulting in a 30% increase in participants' proficiency in programming and computational methodologies.

- Spearheaded the development and execution of three branches of 10-week programs, expanding the organization's reach to international locations in Belize, Turkey, and Ghana, engaging over 200 students and fostering cross-cultural collaboration.
- Championed destigmatization and demystification of STEM fields, leading to a rise in students' interest and confidence in pursuing STEM-related careers.

Global Reverse Logistics Intern, Systems & Analytics – Intel Corporation

May 2022 – Aug 2022

- Navigated 1000+ order numbers and product IDs, within Customer Fulfillment, Planning, and Logistics, to manage backordered return products and identify substitutions from other workflows.
- Produced business case for optimization project of return processes at Intel to intertwine Return for Credit and Return for Exchange/Customer Warranty transit lines.
- Developed insightful analytics using Excel and Power BI frontend, SQL backend, and data warehousing with Salesforce and RPM management tools.

Supply Chain Analytics Intern, Demand Planning – PPG Industries

May 2021 – Mar 2022

- Undertook a range of critical projects including MAPE/WMAPE demand forecasting, generation of daily inventory and OTIF weekly reports, bi-monthly cluster forecasting, and group forecasting for the Powder SBU, which entailed effective Product Data Management (PDM) for over 100,000 SKUs across multiple countries. Also, played a key role in the master data cleansing of historic sales.
- Leveraged advanced analytical tools including Oracle Business Intelligence, Excel, Power BI, and Demantra to execute these tasks, covering Liquid, Powder, and Packaging segments across five primary plant locations.

Operations Project Lead, Konica Minolta

Summer 2019, Summer 2020

- Directed cross-functional teams of 10-20 members, orchestrating the configuration and provisioning of 200,000+ devices, including iPads, Macs, Chromebooks, and Windows devices throughout the season. Implemented workflow optimizations informed by Six Sigma, Lean Manufacturing, industrial psychology, and DMAIC principles, resulting in enhanced efficiency and productivity.
- Provided leadership and training to staff and new team leaders, offering guidance and support in various aspects of their roles. Conducted comprehensive new employee orientations as required. Demonstrated proficiency in conflict de-escalation, problem-solving, and continuous workflow improvement to ensure operational excellence.

RESEARCH EXPERIENCE

SignVision AI – Computer Vision + Adversarial ML in ASL translation, CMSE 890– MSU

Jan 2024 – Apr 2024

- Developed and implemented a deep learning model to accurately translate American Sign Language (ASL) gestures, achieving a baseline testing accuracy of 93.6%.
- Engineered adversarial attack simulations using the Fast Gradient Sign Method (FGSM), improving model robustness with a 97% accuracy against adversarial samples.
- Delivered a functional web application for real-time ASL translation, incorporating backend capabilities for ongoing reinforcement learning and data updates.

Graph-Based Machine Learning for Node Classification Using GCNs and GATs, CSE 881– MSU

Jan 2024 – Apr 2024

- Developed and implemented Graph Convolutional Networks (GCN) and Graph Attention Networks (GAT) to achieve up to 85.33% accuracy in node classification, optimizing performance through advanced neural network architectures.
- Conducted comprehensive data preprocessing, including edge index restructuring and dimensionality reduction using PCA, to enhance the efficiency and accuracy of graph-based machine learning models.
- Analyzed and visualized graph structure and node degree distribution, identifying key network characteristics that informed model selection and tuning strategies.

NeuroNet AI, Revolutionizing Tumor Detection with Precision MRI Analysis, CMSE 830 – MSU

Aug 2023 – Dec 2023

- Crafted a convolutional neural network to classify 400 MRI scans and new, untrained, image uploads with 99.8% accuracy. The CNN processes sagittal, axial, and coronal MRI scans and returns the potential presence of a brain tumor, and type of tumor (meningioma, glioma, pituitary).
- Utilized Python's Keras, Scikit-Learn, TensorFlow, and OpenCV as core packages for computer vision, processing, recognition, and classification. Final product produced in Streamlit.

Optimizing for Brownfield Solar Redevelopment, STT 890 – MSU

Aug 2023 – Dec 2023

- Collaborated with MI dept of EGLE to synthesize a dashboard of criteria selection analytics for brownfield solar redevelopment to optimize and prioritize key contenders for redevelopment.

- Architected a dashboard using Python's Pandas/NumPy, Streamlit, Seaborn, and Folium packages and presented findings to EGLE sponsors, capstone peers, and MSU faculty in a December poster presentation.

ProxiFilm Picks, CSE 482 – MSU

Aug 2023 – Dec 2023

- Designed and developed a personalized movie recommender system using JavaScript, Python, CSS, and HTML, integrating user-based and content-based algorithms for tailored suggestions.
- Utilized advanced data processing with Python, applying collaborative filtering and feature analysis for precise movie recommendations, with a focus on user experience and algorithmic accuracy.
- Bridged theory with practice in software development, demonstrating problem-solving skills and teamwork, optimizing performance, and managing complex datasets in a dynamic project environment.

GreenGrapher: Emissions Data Visualizer, CMSE 830 – MSU

Aug 2023 – Dec 2023

- Developed an interactive web app for visualizing global emissions data, enabling users to explore annual emissions by region, country, and emission type using Python's Plotly, Pandas, and Streamlit, with features like customizable plots and detailed hover-over information.
- Conducted comprehensive data pre-processing, including imputation of missing values and merging with shapefile datasets, and provided analytical insights on global emission trends, highlighting the predominant role of gas emissions and identifying top emitting countries.

Movie Recommendation Algorithms, CMSE 831 – MSU

Jan 2023 – May 2023

- Generated and compared various learning, optimization, and recommendation algorithms using a large dataset of six csv files and 20 million records to recommend movies based on content, user, and film data.
- Utilized Python to create algorithms including KNN, collaborative filtering, mean imputation, singular value decomposition and thresholding, principal component pursuit, soft impute, low-rank matrix recovery, robust principal component analysis, randomized matrix completion, deep learning, matrix factorization, and gradient descent.

Credit Score Modeling and Classification, STT 811 – MSU

Jan 2023 – May 2023

- Conducted EDA, data cleaning, feature engineering, and model generation for a large dataset of 28 features and 100,000 records to generate predictive models for credit score from a variety of features.
- Utilized Python (sklearn, keras, scipy, and others) to conduct all phases of the project, including principal component analysis, latent dirichlet allocation, clustering, support vector classification, and extreme gradient boosted decision trees with hyperparameter tuning to produce the final predictive model.

Data Management for Global Automotive Aftermarket, AESC 410/Capstone – MSU

Jan 2023 – May 2023

- Generated a benchmarking evaluation of eight various supplier management softwares and 25 respective capabilities, to translate into a weighted statistical average score and percentage compatibility of each provider with the needs of the stakeholder.
- Utilized findings from a sensitivity analysis to provide a resilient solution, presented as a business case with impact, findings, and future outlook to conclude the project.

Spotify Music Popularity Predictor, STT 810 – MSU

Sep 2022 – Dec 2022

- Conducted exploratory data analysis of a 20,000 entry and 15 feature dataset to apply foundational statistical methods and predict which features correlate with song popularity.
- Project utilized R programming language, data visualizations, feature engineering, and a supervised machine learning application in linear regression modeling to predict the popularity of the test dataset.
- Applied Skills: ML, regression, R (ggplot, Plotly, tidyverse, caTools, MASS), kernel densities, feature transformation.

An Invasive Species Study on Severity, CMSE 402 – MSU

Jan 2022 – May 2022

- Explored the connection between data visualization and storytelling, without the use of detailed modeling and feature extraction. Generated interactive data visualizations and graphics to demonstrate species taxonomy, geographic clustering, time series, and vehicle for introduction in the environment.
- Applied skills: data visualization, Python (matplotlib, seaborn, plotly, numpy), data cleaning

Research Assistant, Analysis of Voice and Hearing Lab – MSU

Sep 2019 – Sep 2021

- Conducted hearing research with a primary focus on otoacoustic emissions, involving data manipulation and analysis across 10 subjects. Analyzed in-phase and out-of-phase frequency levels for three distinct paradigms, contributing to the advancement of our understanding in this field.
- Played a pivotal role in optimizing research systems by conducting cross-comparisons of voice raters using Excel, resulting in enhanced data accuracy and efficiency. Additionally, developed machine learning models in MATLAB to aid in data analysis. Utilized TeX/Markdown language for manuscript development, ensuring clear and concise presentation of research findings.
- Presented research findings related to glottal attack, offset, and obstruction vocal fold measures at the ASA virtual conference in December 2020, showcasing the culmination of our work and its contribution to the scientific community.

PUBLICATIONS

Chotaliya, S., Fowler, J., Pedrielli, G., Bayba, D., **Norton, M.**, Sain, P., Yu, K. A Foundational Framework for Generative Simulation Models: Pathway to Generative Digital Twins for Supply Chain. *2025 Winter Simulation Conference*. December, 2025.

Scheidler, S., **Norton, M.**, Naghibolhosseini, M. The effect of level-ratio paradigm on DPOAE fine structure. *The Journal of the Acoustical Society of America*. December, 2020.

PRESENTATIONS AND HACKATHONS

Norton, M. (2024, Apr 17). SignVision AI - A computer vision approach to visual translation and its risks [Presentation]. CMSE Master's Thesis Presentations, East Lansing, MI, United States.

Zhu, Y., Lakshmi Narayanan, A., Diedrich, G., **Norton, M.** (2023, Dec 7). Optimizing for Brownfield Solar Redevelopment [Poster Presentation]. MSDS Inaugural Semiannual Capstone Conference, East Lansing, MI, United States.

Norton, M. (2023, May 7). Celebrating daily achievements and impact [Keynote address]. Michigan State University College of Engineering Baccalaureate Commencement, East Lansing, MI, United States.

Michigan State University, Major League Hacking (2023, January 28-29). SpartaHack 8. [Hackathon]. East Lansing, MI, United States.

Scheidler, S., **Norton, M.**, Naghibolhosseini, M. (2020, December 7-11). The effect of level-ratio paradigm on DPOAE fine structure [Conference presentation]. Acoustics Virtually Everywhere, The 179th Meeting of the Acoustical Society of America. Virtual.

Norton, M. (2017, November 9). The Difficulty of Positivity [Keynote address]. TEDxHowellHighSchool, Howell, MI, United States.

RESEARCH SKILLS AND CERTIFICATIONS

Career Essentials in Data Analysis by Microsoft and LinkedIn Certificate

May 2023

AnyLogic Training Course Certificate

May 2023

HackerRank SQL (Basic) Certificate

Nov 2022

Six Sigma Green Belt Certified (SSGBC)[™]

June 2020

MSI Project Management Lean Process Certified (PM-LPC)[™]

May 2020

MSI Executive Management Certified (EMC)[™]

May 2020

Programming Languages: Python, R/RStudio, MATLAB, C++, Kotlin, AnyLogic, HTML/CSS

Libraries: NumPy, SymPy, Pandas, Matplotlib, Plotly, Scikit-learn, SciPy, TensorFlow, Stat, Seaborn, PyTorch

Data Management/Visualization: SQL (SQLite, MySQL, SQLdf), PowerBI, Tableau, Excel, Power Query

EDUCATION

Michigan State University (MSU)

M.S., Data Science, College of Natural Science

Aug 2022 – May 2024

GPA: 4.00

B.S., Applied Engineering Sciences, College of Engineering, Honors College

Aug 2019 – May 2023

GPA: 3.83

- Supply Chain Management concentration
- Computational Mathematics, Science & Engineering minor, College of Engineering
- Business minor, Broad College of Business

SELECT COURSEWORK

- Advanced/Adversarial Machine Learning
- Computer Science, Computational Data Science
- Data Mining and Big Data Analysis
- Statistics, Probability, and Linear Algebra

EXTRACURRICULARS & LEADERSHIP

Marketing Lead, SpartaHack 9, MSU

Sep 2023 – Feb 2024

- Marketed and coordinated outreach for SpartaHack 9, MSU's premier and largest hackathon for students to develop solutions for various social and technology-related challenges.
- Utilized strong leadership skills, brand management/creative development with social media, Canva, and Figma, campus outreach and recruiting, and task organization.

President, Leadership Advantage for Engineers, MSU

Sep 2020 – May 2023

- Student run, intensive four-day leadership seminar designed for incoming MSU students interested in engineering careers.
- As president, facilitated bookings of all campus resources, developed engagement with incoming students and parents, and directed responsibilities of all upperclassmen mentors.

Director of Public Relations, Society of Applied Engineering Sciences, MSU

Sep 2021 – May 2023

- Organization dedicated to fostering interest, providing networks, and marketing opportunities surrounding the Applied Engineering Sciences degree program.
- Under the public relations role, created a new and engaging content brand to increase club interactions, through utilization of interpersonal interactions, web development, and social media management.

Director of Membership Connections, Women in STEM, MSU

Jan 2021 – May 2023

- Club committed to empower, connect, and inspire undergraduate women pursuing a career in STEM.
- Membership connections facilitated activities and events to encourage networking and community-building within the organization, as well as trained new social media chairperson on content engagement.

Mentor, Women in Engineering Student Success, MSU

Aug 2021 – May 2023

- Worked with MSU office dedicated to introducing, engaging, and retaining women in engineering careers to promote long-term diversity and inclusivity.
- Acted as a mentor to first year students in the same majors of engineering to provide advice throughout first year journeys.

President, Society for Engineering Management, MSU

May 2020 – Jan 2022

- Club dedicated to building engineering and project management skills of membership via company sponsored projects and guest speaker education series.
- As president, worked in tandem with the executive team to create educational events and experiences for members, facilitate training and workshops, and increase membership engagement.

H-STAR: Honors Students Actively Recruiting

Jun 2022 – May 2023

H-STAR involves current students in the recruitment of new Honors College members. Ambassadors serve high-achieving high school students as they navigate through the MSU admissions process.

Graduate Women in Science (GWIS) Mid-Michigan

Aug 2022 – May 2024

Engineering Spring Break Corporate Tour

Feb 2020

Changing Health, Attitudes, + Actions to Recreate Girls (CHAARG)

Sep 2019 – Mar 2020

Section Leader, Drumline, Howell High School

Jun 2017 – May 2019

PROFESSIONAL AFFILIATIONS

Graduate Women in Science (GWIS)

Lesbians Who Tech

Society of Women Engineers (SWE)

HONORS & AWARDS**College of Engineering Commencement Speaker**, MSU**Von Ehr Scholarship**, College of Engineering, Merit, MSU**Wochholz Scholarship**, Resource Center for Persons with Disabilities, College of Engineering, MSU**Culpepper Scholarship**, Merit, MSU**3M Optimized Operations Experience Scholarship**, Applied Engineering Sciences, Merit, MSU**Honors College Competitive Scholarship**, Honors College, MSU**Masons Scholarship**, Merit**Cobb-Hall Scholarship**, Business, Merit**Knights of Columbus Scholarship**, Engineering, Merit**Konica Minolta Scholarship**, Merit**Garvy Scholarship**, Music, Merit**Northwest Elementary Collegiate Scholarship**, Merit**Livingston County Textbook Scholarship**, Merit, MSU**National Defense Industrial Association Scholarship**, STEM, Merit**State of Michigan Scholarship**, Merit

REFERENCES

David Bayba

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Gary Godding

Manager (former, retired), Supply Chain Enabling Solutions - Advanced Analytics, Intel Corporation
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Pat Orr

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