

# ANDREW WAYNE HAYLES

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## Professional Summary

Analytically minded professional with a background in Chemical Engineering and 10+ years of experience in technical instruction and complex problem-solving. Leveraging a strong foundation in statistics, mathematics, and programming. Proven ability to analyze data by leveraging statistical modelling and machine learning, develop predictive models, and communicate complex technical concepts to diverse audiences. Also strongly concerned with model validation. Recently completed a Data Science specialization to further enhance skills in Python, SQL, and machine learning.

## Technical Skills

- **Languages:** Python, SQL, C# (Basic)
- **Python Libraries:** Pandas, NumPy, Matplotlib, Scikit-learn
- **Databases:** Experience with SQL database queries for data retrieval and manipulation.
- **Tools & Software:** MS Excel (Advanced), Honeywell Experion, Process Control Systems (DCS/PLC), Power BI
- **Core Competencies:** Statistical Analysis, Data Visualization, Predictive Modeling, Process Optimization, Root Cause Analysis, Technical Communication

## Data Analysis Projects

### Chess Performance Analysis using Linear Regression

- Analyzed a dataset of 84 personal games from chess.com to identify factors influencing win probability.
- Utilized Python and the Pandas library to clean, process, and structure game data.
- Developed a linear regression model to correlate game outcomes with the frequency of "perfect moves," as determined by a high-rated chess engine.
- The resulting model provided quantitative insights into game performance, identifying key decision points that significantly impact results.
- **Tools Used:** Python, Pandas, Scikit-learn

### Exploratory Data Analysis of Health & Psychometric Data

- Collected, integrated, and analyzed two distinct datasets: daily health metrics

(blood pressure, heart rate, stress) from a tracking watch and ~400 data points from experimental high-range intelligence tests.

- Performed data cleaning and statistical analysis in Python, creating a Q-Q plot to verify the normal distribution of test scores, confirming the dataset's integrity for further analysis.
- Visualized trends and correlations between different health metrics to identify patterns in personal wellness data
- **Tools Used:** Python, Pandas, NumPy, Matplotlib, Power BI

### **Yelp Academic Dataset Exploratory Analysis**

- Created a metric to identify most improved businesses using SQL
- Used SQL to analyze user reviews of strongly rated businesses and poorly rated businesses
- Identified actionable plan for improving businesses that are performing poorly and maintaining businesses that are performing well
- **Tools Used:** SQLite, Google Docs

### **Professional Experience**

#### **Tutor | WyzAnt (Online) | 2014 – September 2025**

- Analyzed student performance data to create personalized learning plans, resulting in measurable improvements and a consistent 5.0/5.0 rating across over 300 reviews.
- Translated complex topics in Mathematics, Statistics, and Chemistry into understandable concepts, improving student confidence and comprehension.
- Utilized Excel to track, visualize, and report on student progress, demonstrating skills in data management and presentation.

#### **Simulation Specialist | GP Strategies | Aug 2012 – Feb 2014**

- Managed a high-fidelity control system for a Department of Defense training program, ensuring data integrity and system reliability for all users.
- Analyzed simulation data to identify areas for improvement in operator training modules.
- Collaborated with engineers to develop and deploy a training application using Honeywell Experion control systems software.

#### **Field Service Specialist | Honeywell Process Solutions | Oct 2009 – Aug 2012**

- Diagnosed and resolved complex system issues for major refinery and chemical plant clients by analyzing system logs and performance data, successfully minimizing operational downtime.
- Performed root cause analysis on control system failures to implement lasting

solutions.

**Engineer I** | TTM Technologies | Jul 2008 – Mar 2009

- Managed and optimized the solder mask process, analyzing production data to ensure product quality and improve manufacturing yield.
- Conducted meticulous microscopic analysis and comparative studies to resolve a critical design flaw, leading to improved production accuracy.

**Education & Certifications**

Statistics with Python Specialization (2025)

University of Michigan (via Coursera.org)

Learn SQL Basics for Data Science (2025)

UC Davis (via Coursera.org)

Bachelor of Science, Chemical Engineering (2008)

University of Washington, Seattle, WA

CompTIA A+ Certified

E.I.T. (Engineer in Training) License

NCEES

TESOL/TEFL Certificate (World TESOL Academy) - 2025