Michael Schmidlin

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Summary

Data Scientist (MS) with 8+ years of experience in machine vision and automated measurement systems. Expertise in developing robust software solutions within complex codebases and applying data science to optical metrology. Proven ability to collaborate with cross-functional teams to deliver impactful results.

Work Experience

Corning Incorporated **Corning, NY**
Sr. Data Scientist **2022 – Current**

Led data science initiatives to improve characterizations of chemically strengthened glass used in mobile devices which enabled quality control of the manufacturing process.

- Invented a new algorithm (patent pending) to localize new types of features in an image using a moving window Fourier Transform.
- Removed a production blocking issue for the next genration of glass-ceramic phone glass by using image normalization to correct for optical aberrations in the background of the image (patent pending).
- Decreased production loss by enhancing an existing image processing algorithm with a classification neural network. The classification model improved feature detection in edge case scenarios by 90%.
- Reduced risk for customer in the measurement system by developing a software framework to validate measurement images in live camera view. The image processing runs asynchronously at 20fps while annotating image features which creates a smooth user experience.
- Expanded acceptable range of glass stress by $\sim 20\%$ without increasing risk to customer by modeling glass frangibility (brittleness) with Logistic Regression in order to more accurately determine the USL (Upper Spec Limit). The model was deployed to a streamlit web app for use with future glass recipes.
- Enabled 5 years of consistent software releases by automating Gauge Repeatability and Reproducibility (GRR) analysis in a streamlit web app for use by our software QA (Quality Assurance) team.
- Delivered a flexible and expandable C# library by leading a team of three people through a large refactor project. The project transformed 10K+ lines of code from a single file into a structured class system spanning over 20 files.

Measurement Engineer **2018 – 2022**

Accelerated development of glass vial measurement systems to high volume manufacturing as part of $204M government program Operation Warp Speed.

- Performed and automated data analysis on production data using python scripts and SQL queries to determine effectiveness of inline measurement systems.
- Quantified repeatability of measurement systems through GRR and Analysis of Variance across a wide range of glass attributes such as stress, thickness, warp, and defect sizing.

Education

Data Science Master's Degree **2023**
University of Denver, Daniel Felix Ritchie School of Engineering & Computer Science *Remote*

Math & Music Bachelor's Degree **2018**
State University of New York at Potsdam *Potsdam, NY*

Additional Projects

Slide Quest | *Python, pygame* **2024-2025**

Developed a top down puzzle game in python for PC. The game has several key features including automatic seeded map generation, a breadth first search algorithm to solve the level in the least number of moves, and a level editor which is used to create custom kernels that are used for seeded map generation. The game also features modern software architecture practices like dependency injection and IOC.

Master's Capstone: Stock Price Data Analysis | *Python, alpaca, pytorch* **2023**

Analyzed stock data in order to understand key driver of stock price. News data was scraped and cleaned using custom website scraping code and then classified using sentiment analysis. RNN (Recurrent Neural Network), LSTM (Long Short Term Memory), and GRU (Gated Recurrent Unit) neural networks were trained on historical stock data and then used to forecast future prices. A trade bot was built with alpaca-py for data collection and automated stock trading.

Technical Skills

Programming Languages: Python, C#
Tech Stack: VS Code, Visual Studio, .Net, WPF, Git, S3, Machine Learning, IOC/Dependency Injection