



Corrosion Detection Using Deep Learning

Microsoft
Partner



Gold Data Analytics
Silver Cloud Platform
Gold Data Platform



Manufacturing & Insurance Industry: Determining instance and degree of corrosions

Automated Corrosion detection framework for manufacturers to aid Quality Assurance team in identifying the right warranty tenure for metallic parts



CHALLENGES

Identifying corrosion instances and determining their degree is one of the challenging and crucial task for QA team of manufacturing and Insurance companies

IDEAL SOLUTION

Leveraged Deep Learning based Convoluted Neural Networks to classify degree of corrosion in images based on probabilistic functions

DESIRED OUTCOMES

The output of the Deep Learning Engine was consumed in the form of a web based online tool developed using REST API, helping the QA team in accurately identifying corrosion, reducing manual spot checks



AFFINE

COMMAND THE NEW

Corrosion Detection Using Deep Learning

Affine has developed Corrosion Detection solution using deep learning powered by Azure for manufacturing and insurance companies



80% accuracy in determining instance and degree of corrosions



Brought down manual QC time by up to 65%



Implemented the solution using an online tool through REST API

Affine's Corrosion Detection using Deep Learning Solution powered by Microsoft Azure Services



PICTURE SNAPSHOT

- Click picture of the factory equipment to be inspected
- Picture snapshot can be an automated process for quality control in production cycle and to optimize time



RE-TRAIN MODEL

- The Affine AI solution has been trained on corrosion and damages on corrosion and damages
- Performance benchmarking
- Re-Train the model using the input images in case of different business problems



TRIGGER API

- Trigger the AI solution API to generate the results



DEFECT REPORT

- The output can be generated in either cloud based, or Edge based device depending on the business needs
- An Automated report generated which gives-
 - Type of Defect- Chafing / Edge / Surface Corrosion
 - Defect Intensity
 - Defected area



Azure IoT Hub



Azure ML Service



Azure Synapse Analytics



Azure Data Factory



Event Hub



Azure Functions



Azure DevOps



Logic Apps



Power BI



Blob Storage



Event Grid



Storage Account



Azure Defender



User Management



Azure Security Center



Anomalies Event Hub



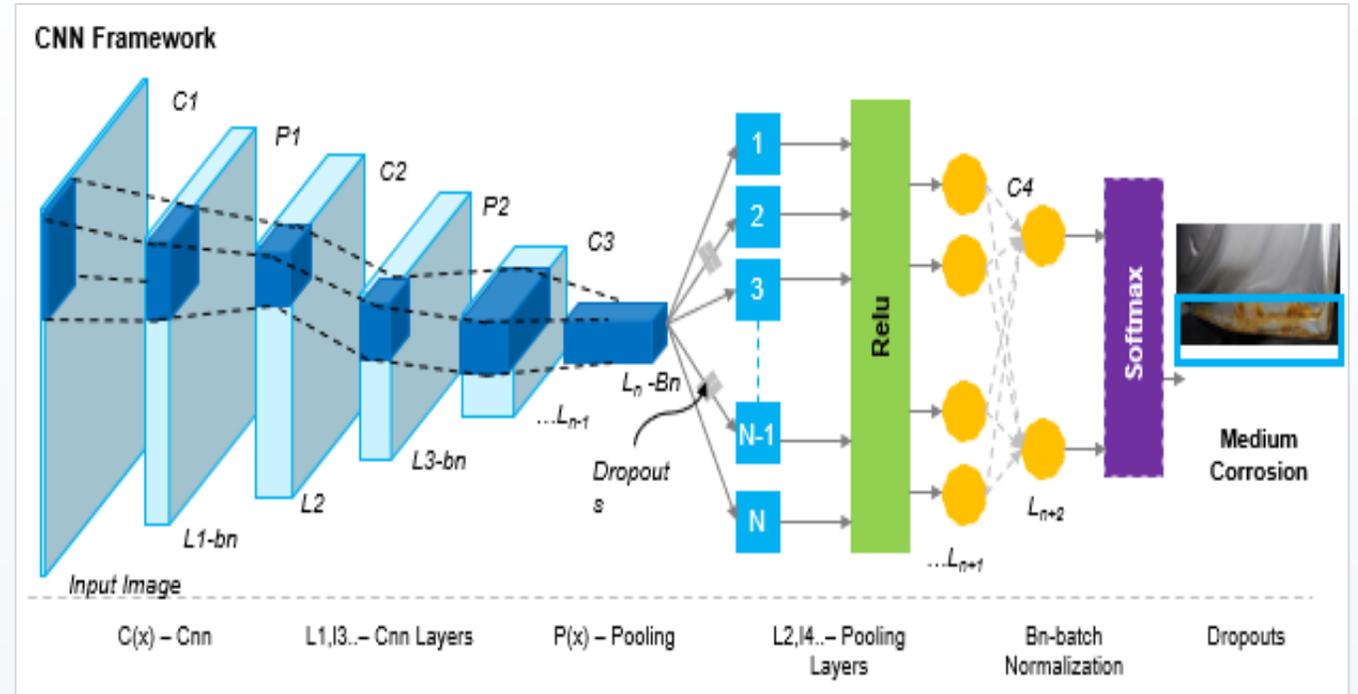
Azure Search



Notification Hub

CEO, Global Automobile Company

“The work is really innovative and will be a great value add in the corrosion detection and grading.”



Manufacturing Industry

Determine Materials' ability to withstand the existing environmental factors

Reduce Manual effort and Time in quality control process



Insurance Companies

Reduce Cost and Time in approving Insurance Claims

Reduce losses by Identifying Fraud Claims



Vehicle Service Industries

Identify right prices in buying / selling used cars

Effective price and maintenance cost optimization in Car Rental or Repair services



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Want to know more?



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