Leading IT Company envisioned to automate data processing from blueprints for Electrical Engineers

Trantor's Robust Technology Skills made it possible!

Client

The client is a global professional services firm focused on delivering digital transformation for their clients, putting digital and data to work to create competitive advantage.

Industry

IT Services

Business need addressed

The client wanted to create a solution for electrical engineers, enabling them to derive meaningful data from electrical blueprints to enable informed decision-making on costs.

Trantor solution

The team, after understanding the client's process, architected a solution that would use Computer Vision and Machine learning to extract data. This data was further processed to provide actionable information.

Business Benefits

30% improvement in bottom-line due to informed decision-making

60% reduction in operational cost

95% data accuracy

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"Trantor helped us create a solution that is by far one of the most reliable image and text processing tools on the market. Our customers are thrilled with the ease of use and cost reduction that this tool provides. Kudos to the Trantor team for their innovative approach to custom development"
- *Manager, Technology & IT*

Project Goals

- Convert blueprints into images for further processing in computer vision
- Provide data processing based on predefined rules
- Ensure deep learning to make the tool more intelligent with time

Technologies Used

- Python
- ROR
- Open CV
- Machine Learning (KERAS)
- Tesseract APIs

Business Matters

Client was able to provide a solution that processed blueprints to provide actionable information. They were able to capture the market that was struggling to make use of their data.

The Problem

The client through its innovative solution wanted to equip electrical engineers with meta-information on their blue-prints at click of a button. Existing solutions were limited to giving data using OCR tools. Such solutions gave

- Limited Use: Error prone data – output data was dependent on quality of input data; and was therefore not reliable
- In-efficient process – OCR tools only provided Image capture and not data capture. Data still had to be typed in using manual, error-prone methods.

By itself typed in data with image capture couldn't provide any actionable information to the engineers.
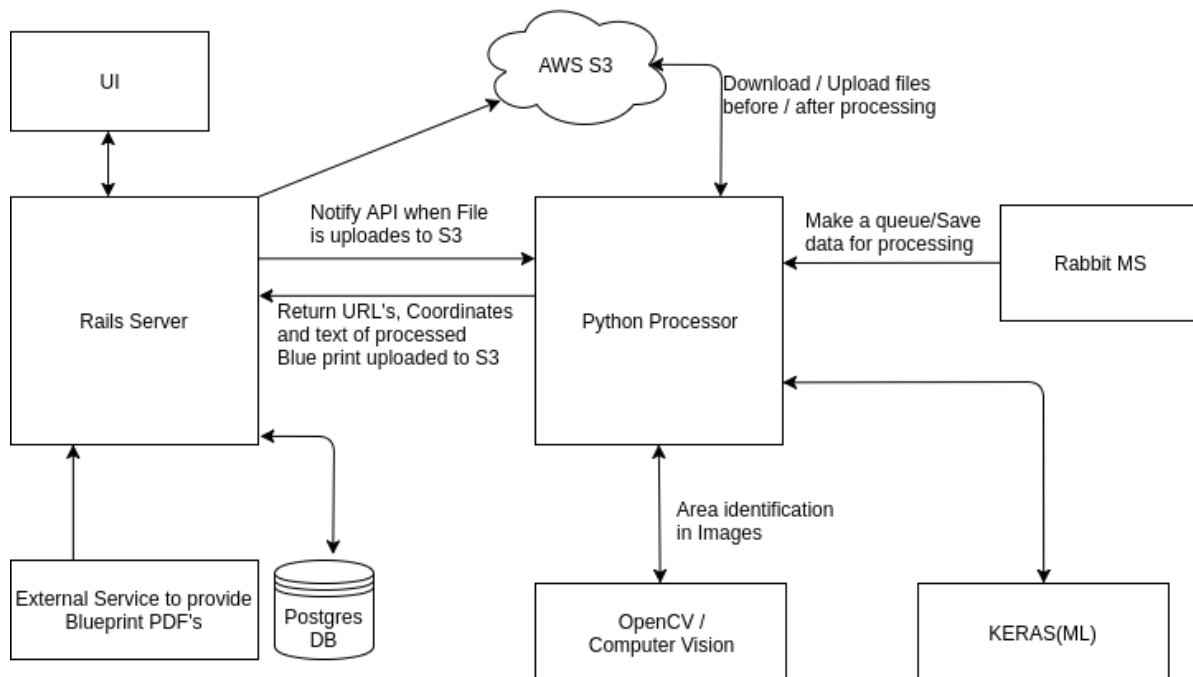
The Trantor Approach

The team determined the steps required in providing actionable information from blueprints. Trantor chose Python as the software language. Keeping the blueprint in mind, they chose Computer vision and Machine learning in the backend to convert blueprints into Images and images to data. This data was further processed into structure format by using predefined rule sets.

 info@trantorinc.com

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The Solution

- Blueprints were converted into Images for Computer vision and Machine Learning(ML).
  - The processing flow was tailored to the characteristics of the source material
  - Using Computer Vision, the regions where detected in which the relevant data was present.
  - Machine learning was used for data extraction from detected regions.
- Data was processed using built-in business rule sets
- Processed data was moved into the server for easy retrieval and search;
- Intuitive, user-friendly UI was designed and built to allow end users to convert blueprints into actionable data in a few clicks

The Benefits

- **30%** improvement in bottom-line due to informed decision-making
- **60%** reduction in operational cost
- **95%** data accuracy

Architecture

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About Trantor

Trantor delivers innovative technology solutions, which enable our clients to achieve their business objectives at reduced cost. With expertise in both Cloud-based and traditional applications, we understand all aspects and challenges of software development from product and feature definition to core product development and QA, deployment, and ongoing maintenance. Our deep experience in fintech, ecommerce, captive centers, and custom software development is unparalleled.

Contact Us

✉ info@trantorinc.com

Ⓢ +1 (650) 646 7818

📍 www.trantorinc.com