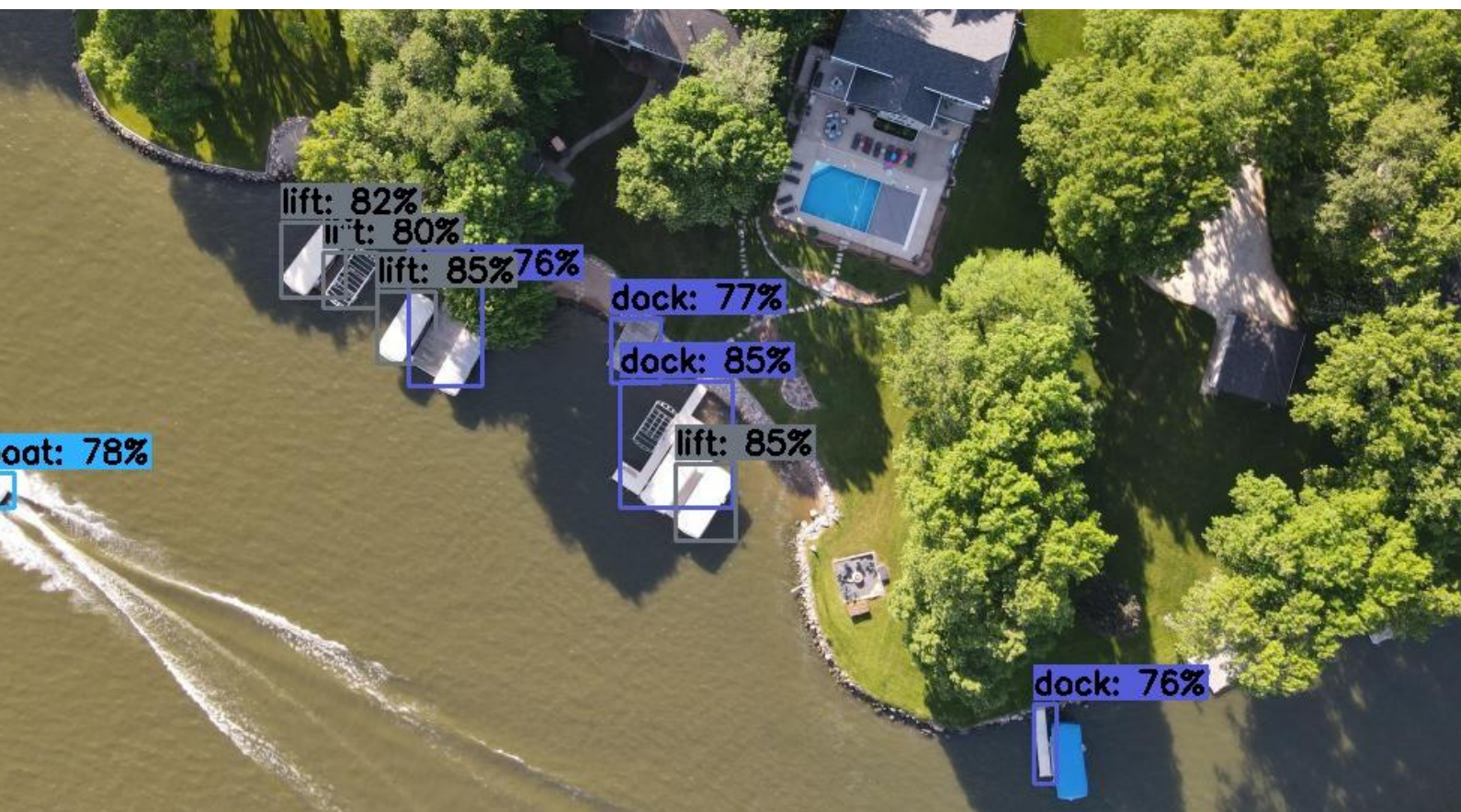# FirstStep.ai Designer

Application Overview

Product Version: 2022

Document Revision: 2022-08-20

"FirstStep.ai Designer is an easy tool for organisations that want to improve their machine learning workflows. It surfaces insights quickly and helps you be more selective about the AI projects you take on."

- Carl Cervone, COO, Enveritas (client)

FirstStep.ai

Product Overview

The FirstStep.ai Designer is a web-based AI training platform, where users can rapidly train and deploy visual Machine Learning (ML) models, leveraging our cloud GPU infrastructure.

Our AI training platform is a no-code design tool, designed for non-developers to use, and offers quick time-to-value for clients. ML models can be deployed to cloud, mobile and EDGE IoT devices, and AI models can be exported in standard formats (tflite, quantized and non-quantized models).
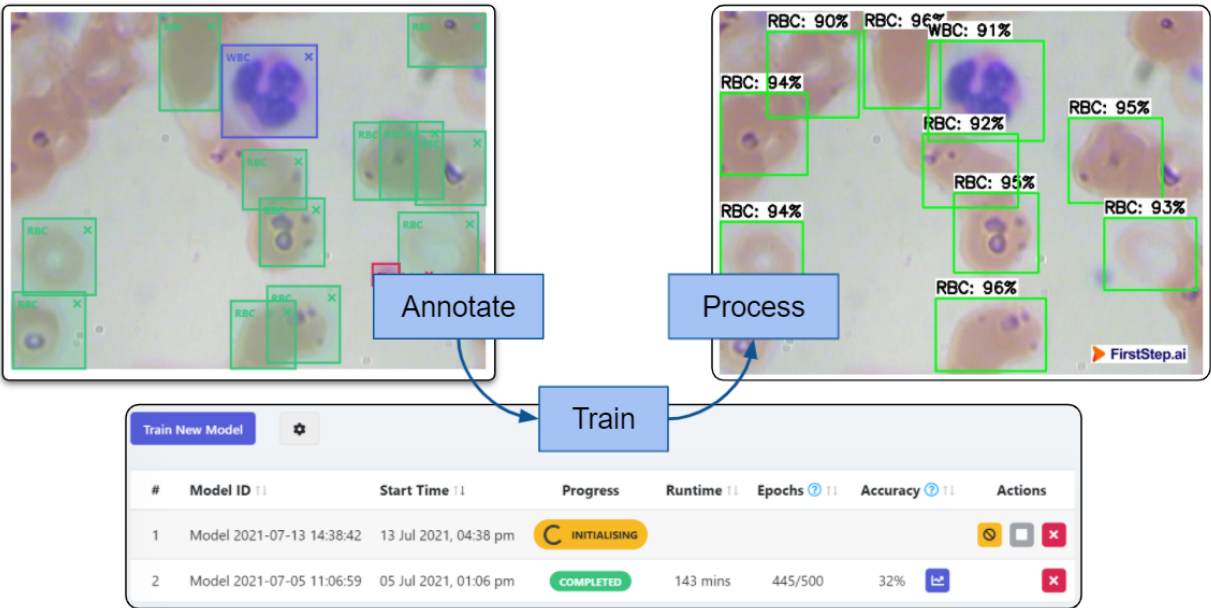
Benefits: FirstStep.ai vs. Hiring an AI expert

	Using FirstStep.ai Designer	Hiring 1 x AI staff member
Team Size	Access to web-based FirstStep.ai Designer (SaaS) supported by a team of professional developers.	1 person working alone
AI Knowledge	Our team includes: 10+ MSc / PhD degrees + combined 60+ years experience.	On Average: A MSc Degree + 3 yrs experience
Hiring Timeline	No waiting. Register and start today!	3-4 months. (1-2 months advertise and interview, 1 months notice period to serve. 1 month of induction, training, tooling)
Working Hours	7 days / 168 hours per week	40 hours per week
Productivity	100% productive time	70% productive time (on average)
Availability	24/7 available. 99.99% uptime	Takes annual leave and sick days
Time Spent	Our clients typically spend: > 70% of time spent making strategic decisions about how to add value to your business. > 20% of the time training AI models > 10% of the time reflecting on how easy it was.	Typically companies spend: > 25% of time spent building valuable features > 25% of time spent stress testing, and fixing bugs > 50% of time spent hardening and deploying AI training pipeline in a production environment (e.g. Cloud or Mobile).
Knowledge Transfer	Short, clear video tutorials. 24/7 hour support team. Dedicated client liaison.	You hope that the new hire can document what they do, which is a rare skill in software developers.
Team Management	No HR overhead	Requires dedicated HR management
Redundancy	Guaranteed continuity of service	Can resign or leave anytime leaving a gap
Knowledge of AI Models	Tools for Object Detection, Object Classification, Instance Segmentation, Pose Estimation, Time Series Anomaly Detection, 3D reconstruction, and more…	Deep knowledge of 1-2 types of AI, with a broad academic knowledge of a few more. Limited by their work experience.
Familiar Frameworks	Full support with PyTorch, Tensorflow 1.x and Tensorflow 2.x, with model export in pt (Pytorch), saved model and tflite format (Tensorflow) with float32, float16 and integer quantization options, with easy production deployment to cloud, EDGE or mobile devices.	Typically either PyTorch, Keras, or Tensorflow

AI Training Infrastructure	A full-features web-based AI SaaS training environment, with dataset management, annotation tools, with one-click AI model training.	Custom built AI training frameworks are usually script based, requiring extensive README files, server environment setup, which make use of a selection of different tools in the pipeline.
Successful projects	100+ client projects (and counting)	Limited to past work experience and work opportunities.
Proven Track Record	Global network of active clients across various industries (industrial, security, and medical)	
Services Team	Elastic Services team available with expertise in AI modelling, Android app development, AWS cloud servers, API endpoints, and	Project services require pulling the resource from product development to ad-hoc project work. High switching costs and bus factor.
AI modelling and training	Drag-and-drop image dataset management, simple annotations and labelling, and one-click AI model training with optional custom configuration.	Building a pipeline can take **weeks**, and hardening a pipeline for reliable, repeatable results can take **months**.
Supporting	24/7 support included. No legacy code to maintain.	Code developed in-house results in legacy code, and dependencies on key staff.
Future business requirements	New AI model types are released every quarter in the FirstStep.ai Designer.	Expanding knowledge requires investment and upskilling staff members.
Ability to explore ideas and switch	Unlimited freedom to create as many different types of AI projects as you like. No project limit, no limits on AI model training.	Switching costs are high, and you need to carefully manage development pipelines. Concurrent projects always result in overall productivity loss.
Cost	Once-off annual license fee, with no usage limits.	Competitive monthly salary ($8k-$16k pm) & benefits, cloud and server infrastructure costs ($1k pm).
Return on Investment (ROI)	12 month license cost is equivalent to 1 month AI expert's salary* ROI for our clients is **12x in the first 12 months**, based on license vs salary costs alone.	Typically **12-24 months** to realise any return on investment.
Time to first value	**1-4 hours**, depending on project complexity. Upload (10 minutes), annotate (30 minutes), one-click training (1 click), a coffee break while the AI model is trained (60-120 minutes), then choose how to deploy your model (2 minutes).	Typically **3-6 months (300-600 hours)** to get a first version of a working prototype integrated into a production environment.

* Based on Global Benchmark

References from clients:

★ *"FirstStep.ai Designer is an easy tool for organisations that want to improve their machine learning workflows. It surfaces insights quickly and helps you be more selective about the AI projects you take on."* - Carl Cervone (COO, Enveritas)

★ *"The FirstStep.ai Designer is a breakthrough platform with a myriad of applications, including the field of medical imaging."* - Dr Kit Vaughan (CEO, CapeRay)

★ *"The results provided by the FirstStep.ai Designer are simply stunning, two orders of magnitude better than manual editing."* - Dr Kit Vaughan (CEO, CapeRay)

About the FirstStep.ai Designer

Creating Projects

Users can create their own projects for each ML application. Each project is a collection of all relevant data, allowing for a quick overview of all user projects and their status. Users can quickly duplicate an existing project if they wish to try to make changes without losing their original project.
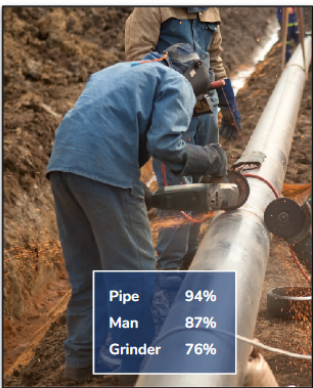
Selecting your AI Model Type

Different applications require different tools, so we provide a wide range of models to choose from. When creating a new project, users can choose from several types of AI project types (shown below). First-time users can also choose from existing project templates, or start a new project from scratch.

Datasets & Annotations

The FirstStep.ai Designer allows users to add and annotate their own datasets by uploading images and marking them up.

Users start by creating **labels** that represent the objects which need to be detected. Next, users can upload images to create a dataset. Users can also upload videos and we will split your video into frames.

Users then use the **annotation tool** to draw boxes around objects in images using our intuitive web-based annotation tool. Changes are saved automatically and users can navigate easily between images in the dataset.

The ML model will learn from the annotations, so the more images you annotate, the more data the models will have to learn from, creating better models.
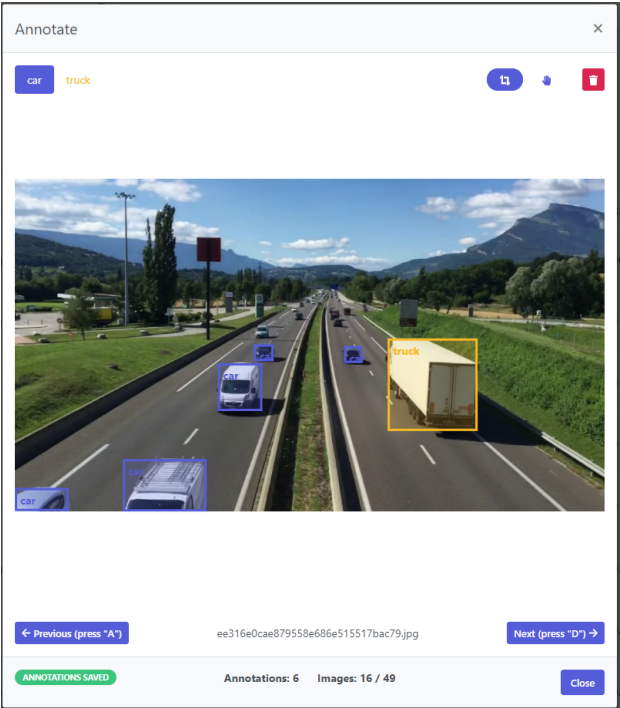
Dataset Analysis

After the images have been annotated, the FirstStep Designer provides users with a real-time analysis of the annotated dataset, showing you how many images have been annotated, the total image count, and even an annotation balancing score (that shows how balanced the dataset is in terms of objects distribution by classes).

This analysis tool assists the user in creating a well-balanced data search for efficient machine learning model training. The more balanced the dataset is, the higher the mAP (mean average precision).
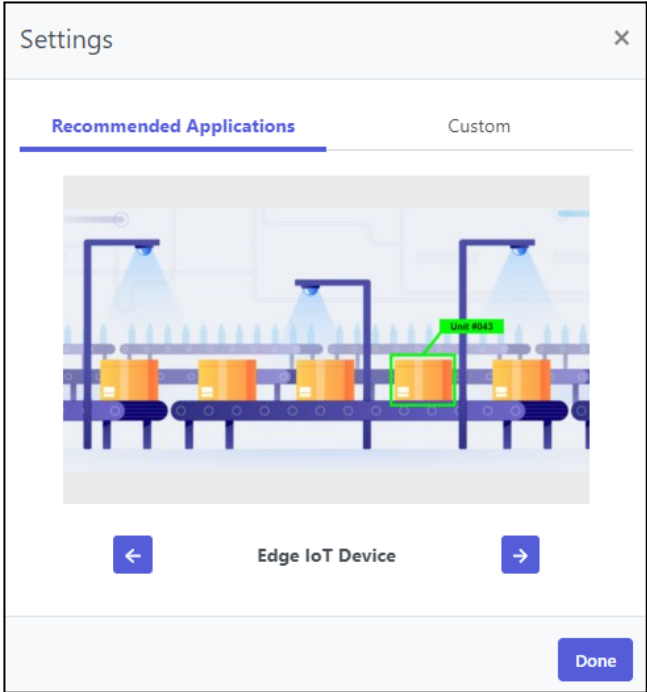
AI Model Training

Once the dataset has been annotated, users can start training their own machine learning model with our 1-click model training. Yes, it's that simple!

Training Configuration Options

Users can choose from predefined configuration templates (e.g. Mobile device, IoT Edge deployment, or Cloud Server deployment), while advanced users can configure custom training parameters (e.g. Tensorflow or PyTorch framework selection, base model options, model input size options, and even augmentation options). Our software analyzes your dataset, and chooses the best underlying parameters to get you the best AI model.
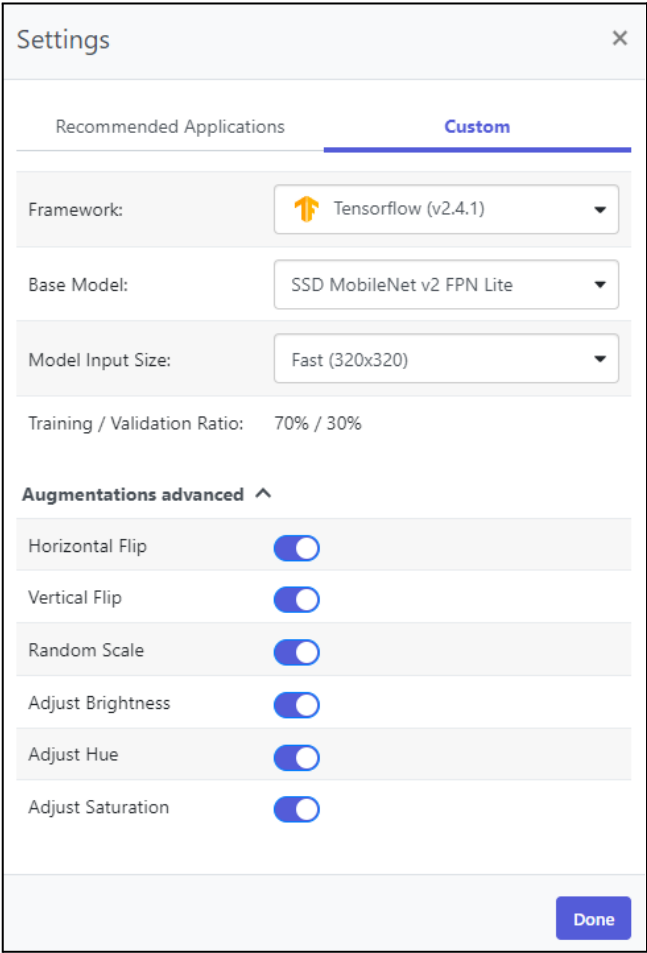
AI Model Training Results

Users can see their model training progress, as well as a list of all previously trained models. The FirstStep.ai Designer leverages state-of-the-art Cloud computing architectures for AI training, so that you don't have to provision your own infrastructure.

#	Model ID ↑↓	Start Time ↑↓	Framework	Model Info	Dataset Info	Progress	Runtime ↑↓	Epochs ？↑↓	Accuracy ？↑↓	
1	Model (ID: 005)	26 Nov 2021, 05:19 pm	⬆	ℹ	ℹ	INITIALISING	2 mins			
2	Model (ID: 004)	28 Oct 2021, 12:17 pm	⬆	ℹ	ℹ	COMPLETED	340 mins	757/1000	82%	📈
3	Model (ID: 003)	28 Oct 2021, 12:17 pm	⭮	ℹ	ℹ	COMPLETED	26 mins	585/1000	75%	📈
4	Model (ID: 002)	11 Aug 2021, 07:58 pm	⭮	ℹ	ℹ	COMPLETED	38 mins	1000/1000	84%	📈
5	Model (ID: 001)	30 Jul 2021, 05:05 pm	⬆	ℹ	ℹ	COMPLETED	110 mins	332/1000	78%	📈

During the training process users can see real-time information on how their model is improving its detection accuracy.
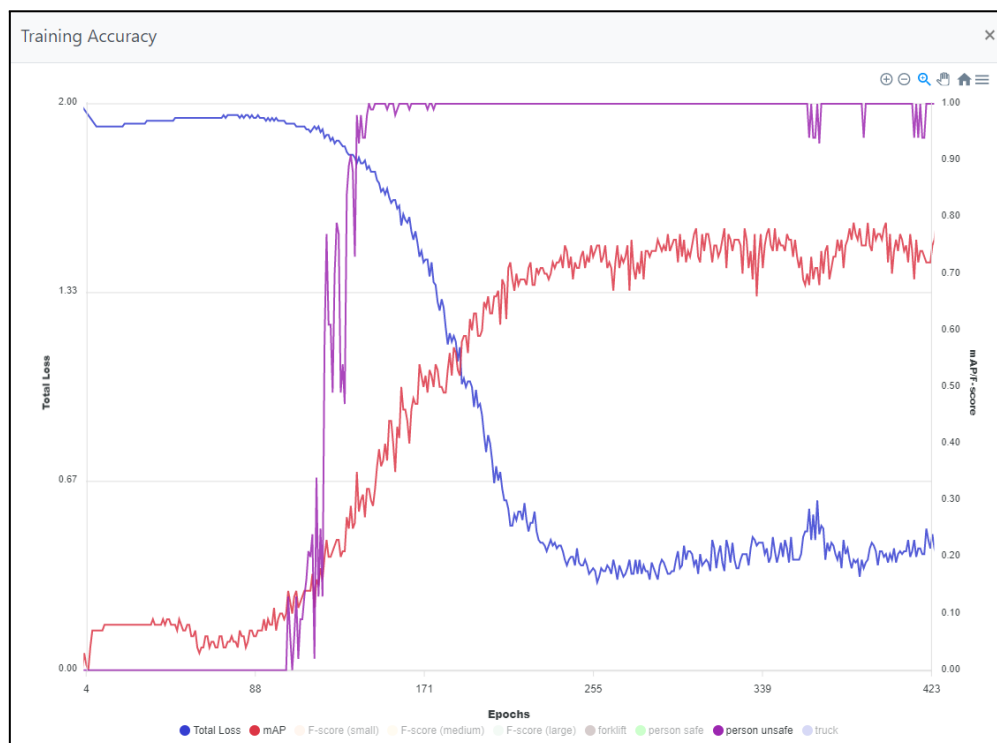

After the model has been trained, users can check on the final mAp and decide on whether it is high enough or if they want to improve it. If users wish to improve on your accuracy score, they can go back to the dataset and add more images, increase its balancing score, adjust the training parameters, and simply re-train another model.

Model Simulation

Users can test their ML models inside the FirstStep.ai Designer by uploading images and videos (not included in the training dataset) to see how well the model is able to detect and classify objects.
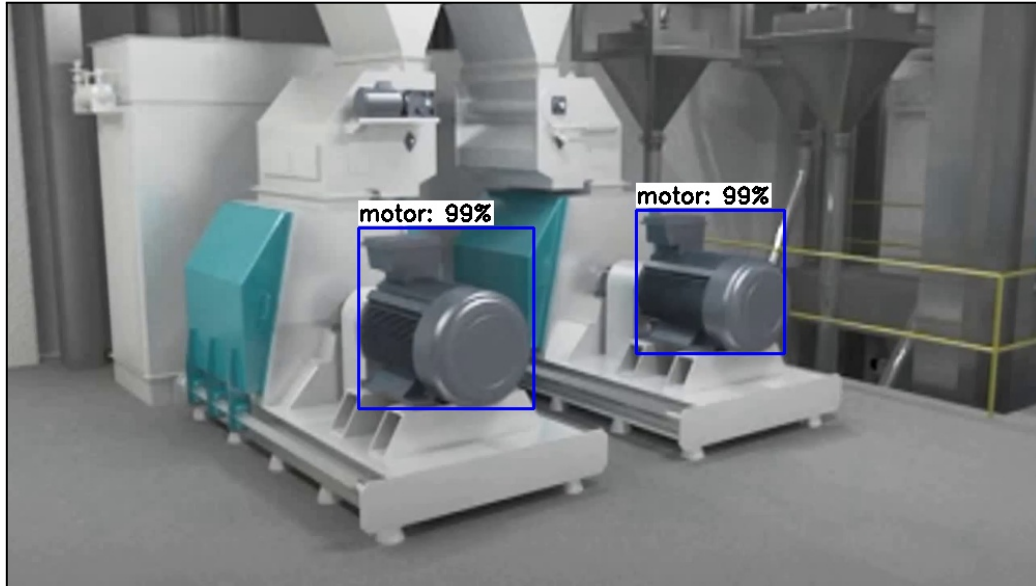
Model Download

Professional users can download the ML models in various formats, ready for production deployment. Users can download the following types of applications / models:

- Cloud server models (Pytorch of Tensorflow)
- IoT EDGE device format (Tensorflow)
- Mobile app format (Tensorflow TFLITE)
- Android APK builds (a ready-made Android app for demos)
- Android APK source code (for developers to extend)
- High-performance formats (Int8, Float16, or Float32 Quantized)

Looking for Assistance?

If you would like our team's support with annotating datasets, or training your ML models, reach out to us and we'll gladly discuss your application with you, and provide you with additional guidance.

More Information

For more information visit firststep.ai or contact: sales@firststep.ai