1. Target Applications

Scikit-learn	TensorFlow
• **Classical ML algorithms**: Linear/logistic regression, SVM, decision trees, random forests, k-NN, clustering (k-means), etc.	• **Deep Learning (DL)**: Neural networks (CNNs, RNNs, transformers), reinforcement learning, generative models (GANs).
• **Tabular/structured data**: Ideal for traditional datasets (e.g., CSV, SQL tables).	• **Unstructured data**: Dominant in image, video, audio, text, and sequence data.
• **Small-to-medium datasets**: Optimized for CPU efficiency.	• **Large-scale data**: GPU/TPU acceleration for big data and complex models.
• **Preprocessing & evaluation**: Robust tools for feature engineering, cross-validation, and metrics.	• **Deployment**: Tools like TensorFlow Lite/TFX for mobile, web, and edge deployment.

2. Ease of Use for Beginners

Scikit-learn	TensorFlow
• **Low entry barrier**: Consistent, intuitive API (e.g., `fit()`, `predict()` for all models).	• **Steeper learning curve**: Requires understanding of neural networks, gradients, and hardware (GPU/TPU).
• **Minimal setup**: Works out-of-the-box with Python (no GPU needed).	• **Complex setup**: GPU drivers, CUDA, and environment configuration often required.
• **Focus on simplicity**: Abstracts math complexities; emphasizes usability.	• **Keras API simplifies DL**: High-level API (`tf.keras`) eases model building, but debugging DL remains challenging.
• **Ideal for ML fundamentals**: Faster prototyping for classical problems.	• **Beginner pitfalls**: Debugging shape mismatches, overfitting, and hardware issues.

3. Community Support

Scikit-learn	TensorFlow
• **Mature, stable community**: Extensive documentation, tutorials, and well-tested code.	• **Massive DL-focused community**: Dominant in industry/research; backed by Google.
• **Academic/industry adoption**: Trusted for production ML pipelines (e.g., finance, healthcare).	• **Rich resources**: Official guides, Stack Overflow support, pre-trained models (TF Hub), and courses (Coursera, Udacity).
• **GitHub**: 58k+ stars, 3k+ contributors.	• **GitHub**: 180k+ stars, 3k+ contributors.
• **Limited DL discussion**: Focuses on classical techniques.	• **Rapid innovation**: Frequent updates (but may break backward compatibility).