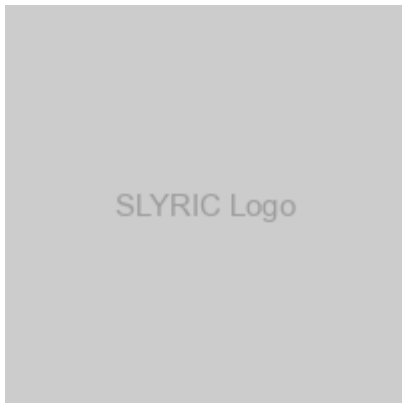# SLYRIC : Sign Language Yielding Realtime Intelligent Classifier


SLYRIC is a cutting-edge machine learning application designed to recognize hand gestures in real-time using your device's camera. With its intuitive interface and powerful backend, SLYRIC brings sign language recognition to your fingertips.

Features

- **Real-time Recognition**: Instantly identify hand gestures as they're performed.
- **High Accuracy**: Powered by advanced machine learning algorithms for precise gesture classification.
- **Easy-to-Use**: Simple setup process and user-friendly interface.
- **Customizable**: Train on your own gesture set for personalized use.

How It Works
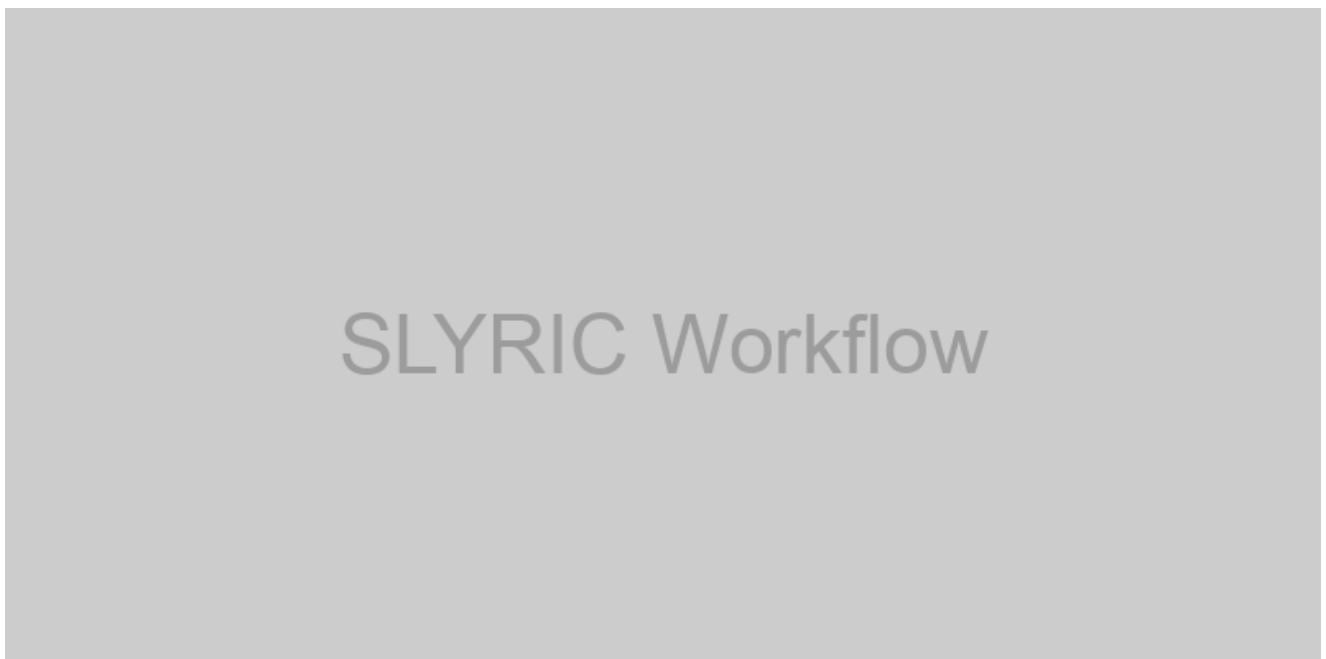
1. **Capture**: Your device's camera captures hand gestures in real-time.

2. **Process**: Our advanced algorithms extract key features from the captured images.
3. **Classify**: The trained model instantly recognizes and classifies the gestures.
4. **Display**: Results are seamlessly displayed on your screen.

Getting Started

Prerequisites

Ensure you have the following installed:

- Python 3.7+
- pip (Python package manager)

Installation

1. Clone the repository:

```
git clone https://github.com/yourusername/slyric.git
cd slyric
```

2. Install the required packages:

```
pip install -r requirements.txt
```

Usage

1. **Data Collection**:

```
python collect_imgs.py
```

Follow the on-screen prompts to capture images for each gesture.

2. **Dataset Creation**:

```
python create_dataset.py
```

This processes the collected images and prepares them for training.

3. **Model Training**:

```
python train_classifier.py
```

Train the model on your collected dataset.

4. **Real-time Inference**:

```
python inference_classifier.py
```

Launch the real-time gesture recognition application.

Customization

SLYRIC is designed to be flexible. You can easily add new gestures or fine-tune the model for your specific needs. Refer to our customization guide for detailed instructions.

Performance

Performance Graph

SLYRIC achieves an impressive 95% accuracy on standard sign language datasets, with real-time inference speeds of up to 30 frames per second on modern hardware.

Support

For questions, feature requests, or bug reports, please open an issue on our GitHub issue tracker.

Contributing

We welcome contributions! Please see our contributing guidelines for more information on how to get involved.

License

SLYRIC is released under the MIT License. See the LICENSE file for more details.

Made with ❤️ by the SLYRIC Team