BakuFlow Demo Requirements and Demo Plan

# 1. Technical Requirements

## 1.1 Hardware

- Computer: Laptop or desktop with Intel i5 8th Gen (or AMD equivalent) or higher  
- RAM: Minimum 8GB (16GB recommended)  
- GPU: NVIDIA CUDA-compatible GPU with at least 4GB VRAM preferred for AI features; demo can run on CPU with reduced speed  
- Display: Full HD (1920×1080) or higher  
- Power Supply: Access to power outlets  
- Table/Desk Space: For demo computer and mouse

## 1.2 Software

- Operating System: Windows 10/11, macOS 10.14+, or Ubuntu 18.04+  
- Python: Version 3.8 or higher (3.8–3.11 supported)  
- Python Packages (installed via `pip install -r requirements.txt`):  
 • PyQt5 >= 5.15.0  
 • opencv-python >= 4.5.0  
 • numpy >= 1.19.0  
 • torch >= 1.8.0  
 • torchvision >= 0.9.0  
 • Pillow >= 8.0.0  
 • ultralytics >= 8.0.0  
- Write Permissions: To save annotation files in demo directories

## 1.3 Network

- Internet Access (recommended): For model downloads and documentation, but not strictly required if resources are pre-installed.

## 1.4 Data and Files

- Sample Images and `classes.txt` provided by the demo team  
- Pre-trained Model (`yoloe-11l-seg.pt`) preloaded or downloaded  
- Demo Workspace: Folder with read/write permissions

# 2. Demo Plan

## Introduction & Problem Statement

• Introduce BakuFlow as a powerful, user-friendly image annotation tool designed for efficient video frame and image dataset labeling.  
• Briefly mention the common challenges of traditional frame-by-frame labeling (slow, repetitive, frustrating) that BakuFlow solves.  
• Highlight scalable annotation through features like Live Magnifier, Data Augmentation, Label Propagation, and Auto Labeling.

## Manual Annotation & Live Magnifier

• Demonstrate importing video or image files.  
• Show how to select an object and apply a label to a single frame.  
• Highlight the Live Magnifier for pixel-level precise selection, especially in cluttered or small-object scenarios.

## Format Support & Export

• Briefly mention support for various input image formats.  
• Demonstrate exporting annotations to standard schemas like YOLO, Pascal VOC, and COCO.

## Workflow Efficiency with Hotkeys

• Demonstrate key hotkeys for labeling, tool switching, and navigation.  
• Emphasize how hotkeys accelerate workflow.

## Data Augmentation

• Select an annotated image.  
• Show the Data Augmentation tool creating multiple image variations (e.g., angle, brightness, orientation) to enrich training data and improve model performance.

## Label Propagation

• Select an annotated frame in a video sequence.  
• Demonstrate Label Propagation for transferring labels to subsequent frames with a single click, reducing repetitive work.

## Automatic Labeling

• Annotate a single frame in a sequence.  
• Demonstrate Automatic Labeling, explaining how it auto-labels similar images by reusing labels and tracking moving objects, minimizing repetitive tasks.

## Conclusion & Value Proposition

• Recap BakuFlow’s key benefits: large-scale annotation, automation, workflow acceleration, and high precision.  
• Position BakuFlow as an advanced, forward-looking solution for efficient image labeling.

## Live Q&A/Reviewer Interaction (Optional)

• Invite reviewers to interact with the tool (label, propagate, augment, export).  
• Answer questions or demonstrate additional requested features.

## Preparation Checklist

- Laptop/PC with Python 3.8+ and dependencies  
- Preloaded models, `classes.txt`, sample images  
- Write permissions for output folders  
- Projector or display (if required)  
- Power and network available