```
#include "esp_camera.h"
#include <WiFi.h>

//
// WARNING!!! PSRAM IC required for UXGA resolution and high JPEG quality
//            Ensure ESP32 Wrover Module or other board with PSRAM is selected
//            Partial images will be transmitted if image exceeds buffer size
//

// Select camera model
//#define CAMERA_MODEL_WROVER_KIT // Has PSRAM
//#define CAMERA_MODEL_ESP_EYE // Has PSRAM
//#define CAMERA_MODEL_M5STACK_PSRAM // Has PSRAM
//#define CAMERA_MODEL_M5STACK_V2_PSRAM // M5Camera version B Has PSRAM
//#define CAMERA_MODEL_M5STACK_WIDE // Has PSRAM
//#define CAMERA_MODEL_M5STACK_ESP32CAM // No PSRAM
#define CAMERA_MODEL_AI_THINKER // Has PSRAM
//#define CAMERA_MODEL_TTGO_T_JOURNAL // No PSRAM

#include "camera_pins.h"

IPAddress local_IP(192, 168, 1, 150);
IPAddress gateway(192, 168, 1, 1);
IPAddress subnet(255, 255, 255, 0);

const char* ssid = "";
const char* password = "";

void startCameraServer();

void setup()
{
    Serial.begin(115200);
    Serial.setDebugOutput(true);
    Serial.println();

    camera_config_t config;
    config.ledc_channel = LEDC_CHANNEL_0;
    config.ledc_timer = LEDC_TIMER_0;
    config.pin_d0 = Y2_GPIO_NUM;
    config.pin_d1 = Y3_GPIO_NUM;
    config.pin_d2 = Y4_GPIO_NUM;
    config.pin_d3 = Y5_GPIO_NUM;
    config.pin_d4 = Y6_GPIO_NUM;
    config.pin_d5 = Y7_GPIO_NUM;
    config.pin_d6 = Y8_GPIO_NUM;
    config.pin_d7 = Y9_GPIO_NUM;
    config.pin_xclk = XCLK_GPIO_NUM;
    config.pin_pclk = PCLK_GPIO_NUM;
    config.pin_vsync = VSYNC_GPIO_NUM;
    config.pin_href = HREF_GPIO_NUM;
    config.pin_sscb_sda = SIOD_GPIO_NUM;
    config.pin_sscb_scl = SIOC_GPIO_NUM;
    config.pin_pwdn = PWDN_GPIO_NUM;
    config.pin_reset = RESET_GPIO_NUM;
    config.xclk_freq_hz = 20000000;
```

```
57      config.pixel_format = PIXFORMAT_JPEG;
58
59      // if PSRAM IC present, init with UXGA resolution and higher JPEG quality
60      //                      for larger pre-allocated frame buffer.
61      if (psramFound())
62      {
63          config.frame_size = FRAMESIZE_UXGA;
64          config.jpeg_quality = 10;
65          config.fb_count = 2;
66      }
67      else
68      {
69          config.frame_size = FRAMESIZE_SVGA;
70          config.jpeg_quality = 12;
71          config.fb_count = 1;
72      }
73
74  #if defined(CAMERA_MODEL_ESP_EYE)
75    pinMode(13, INPUT_PULLUP);
76    pinMode(14, INPUT_PULLUP);
77  #endif
78
79      // camera init
80      esp_err_t err = esp_camera_init(&config);
81      if (err != ESP_OK)
82      {
83          Serial.printf("Camera init failed with error 0x%x", err);
84          return;
85      }
86
87      sensor_t* s = esp_camera_sensor_get();
88      // initial sensors are flipped vertically and colors are a bit saturated
89      if (s->id.PID == OV3660_PID)
90      {
91          s->set_vflip(s, 1); // flip it back
92          s->set_brightness(s, 1); // up the brightness just a bit
93          s->set_saturation(s, -2); // lower the saturation
94      }
95      // drop down frame size for higher initial frame rate
96      s->set_framesize(s, FRAMESIZE_QVGA);
97
98  #if defined(CAMERA_MODEL_M5STACK_WIDE) || defined                              ↵
      (CAMERA_MODEL_M5STACK_ESP32CAM)
99    s->set_vflip(s, 1);
100   s->set_hmirror(s, 1);
101 #endif
102
103     if (!WiFi.config(local_IP, gateway, subnet))
104     {
105         Serial.println("STA failed to configure.");
106     }
107
108     WiFi.begin(ssid, password);
109
110     while (WiFi.status() != WL_CONNECTED)
111     {
```

```
112         delay(500);
113         Serial.print(".");
114     }
115     Serial.println("");
116     Serial.println("WiFi connected");
117 
118     startCameraServer();
119 
120     Serial.print("Camera Ready! Use 'http://");
121     Serial.print(WiFi.localIP());
122     Serial.println("' to connect");
123 }
124 
125 void loop()
126 {
127     delay(10000);
128 }
```