

# Quick Deploy Guide - Python Backend to Railway

**Estimated Time:** 10-15 minutes

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## Prerequisites

Before starting:

- [x] Code is in GitHub: <https://github.com/baller70/BasketballAnalysisAssessmentApp.git>
  - [x] Backend is in `python-backend/` directory
  - [x] You have a GitHub account
  - [x] You know your Abacus AI frontend URL
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## Step-by-Step Deployment (Railway)

### Step 1: Create Railway Account

1. Go to [railway.app](https://railway.app) (<https://railway.app>)
2. Click “Start a New Project”
3. Sign in with **GitHub**

 Time: 2 minutes

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### Step 2: Deploy from GitHub

1. Click “Deploy from GitHub repo”
2. Select: `BasketballAnalysisAssessmentApp`
3. Railway will detect your Dockerfile automatically

 Time: 1 minute

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### Step 3: Configure Root Directory

1. Click on the deployed service
2. Go to **Settings** tab
3. Find “Root Directory”
4. Set to: `python-backend`
5. Click **Save**

 **Important:** This step is crucial! Your backend is in a subdirectory.

 Time: 1 minute

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## Step 4: Add Environment Variables

1. Click “**Variables**” tab
2. Click “**+ New Variable**”
3. Add these **5 variables**:

```
# 1. Replicate API Token
REPLICATE_API_TOKEN=r8_XVbSqNpDmahHdfRWDjmivN2ZNPk3MUH2w1N4x

# 2. CORS Origins (⚠ REPLACE WITH YOUR FRONTEND URL!)
ALLOWED_ORIGINS=https://your-abacus-frontend-url.com,http://localhost:3000

# 3. Host
HOST=0.0.0.0

# 4. Port
PORT=$PORT

# 5. MediaPipe Complexity
MEDIAPIPE_MODEL_COMPLEXITY=2
```

**⚠ Critical:** Replace `your-abacus-frontend-url.com` with your actual Abacus AI frontend URL!

 Time: 3 minutes

## Step 5: Generate Public URL

1. Go to **Settings > Networking**
  2. Click “**Generate Domain**”
  3. Copy the URL (looks like: `https://basketball-backend-production-xxxx.up.railway.app`)
-  **Save this URL** - you'll need it for the frontend!

 Time: 1 minute

## Step 6: Wait for Deployment

1. Go to “**Deployments**” tab
2. Watch the build logs
3. Wait for “**Deployment live**” (green status)

 Time: 3-5 minutes

## Step 7: Test Your Backend

Open in browser or run in terminal:

```
curl https://your-railway-url.up.railway.app/health
```

**Expected Response:**

```
{
  "status": "healthy",
  "version": "1.0.0",
  "mediapipe_available": true
}
```

 If you see this, your backend is live!

 Time: 1 minute

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## Step 8: Update Frontend

1. Go to your **Abacus AI dashboard**
2. Find your frontend deployment settings
3. Update environment variable:

bash

```
NEXT_PUBLIC_PYTHON_API_URL=https://your-railway-url.up.railway.app
```

4. **Redeploy** the frontend

 **Important:** No trailing slash!

 Time: 2 minutes

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## Step 9: Update CORS (If Needed)

If you forgot to add your frontend URL in Step 4:

1. Go back to Railway **Variables** tab
2. Edit `ALLOWED_ORIGINS`
3. Add your Abacus AI frontend URL
4. Example:

bash

```
ALLOWED_ORIGINS=https://basketball-app.abacus.ai,http://localhost:3000
```

5. Save (Railway will automatically redeploy)

 Time: 1 minute

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## Step 10: Test Integration

1. Open your Abacus AI frontend
2. Navigate to analysis page
3. Upload a basketball image
4. Verify:
  -  Image uploads
  -  Pose detection works
  -  Skeleton overlay displays
  -  No CORS errors in console (F12)

 Time: 2 minutes

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## You're Done!

Your backend is deployed and connected to your frontend.

### **URLs to Save:**

- Backend: `https://your-railway-url.up.railway.app`
  - Frontend: `https://your-abacus-frontend-url.com`
  - API Docs: `https://your-railway-url.up.railway.app/docs`
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## Quick Troubleshooting

### **Problem: CORS Error**

**Symptom:** Console shows “blocked by CORS policy”

#### **Solution:**

1. Go to Railway → Variables
  2. Edit `ALLOWED_ORIGINS`
  3. Add your frontend URL
  4. Save and wait for redeployment
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### **Problem: 404 Not Found**

**Symptom:** `/health` returns 404

#### **Solution:**

1. Check **Root Directory** is set to `python-backend`
  2. Redeploy if needed
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### **Problem: Build Failed**

**Symptom:** Deployment shows “Build failed”

#### **Solution:**

1. Check deployment logs for errors
  2. Verify all files are in GitHub
  3. Ensure `Dockerfile` exists in `python-backend/`
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### **Problem: MediaPipe Not Available**

**Symptom:** `mediapipe_available: false` in health check

#### **Solution:**

1. Your Dockerfile already includes the fix
2. Try redeploying from scratch
3. Check build logs for “Successfully installed mediapipe”

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## Problem: Frontend Can't Connect

**Symptom:** Network errors in browser

**Solution:**

1. Verify `NEXT_PUBLIC_PYTHON_API_URL` is set correctly
  2. Check no trailing slash in URL
  3. Ensure backend is running (test `/health`)
  4. Check CORS settings
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## Next Steps

- **Working?** Great! Monitor performance and costs
  - **Issues?** See full troubleshooting in `PYTHON_BACKEND_DEPLOYMENT_GUIDE.md`
  - **Learn more:** Railway docs at [docs.railway.app](https://docs.railway.app) (<https://docs.railway.app>)
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## Cost Breakdown (Railway)

**Free Tier:**

- \$5 credit per month
- Approximately 500-1000 API requests
- Good for testing and small projects

**Hobby Plan (\$5/month):**

- Unlimited usage (fair use)
- Always-on service
- Better performance
- Recommended for production

**Estimated Costs:**

- Development: Free tier is sufficient
  - Production (100 users/day): ~\$5-10/month
  - High traffic (1000+ users/day): ~\$20-50/month
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## Important Links

- **Full Deployment Guide:** `/home/ubuntu/basketball_app/PYTHON_BACKEND_DEPLOYMENT_GUIDE.md`
  - **Railway Dashboard:** [railway.app/dashboard](https://railway.app/dashboard) (<https://railway.app/dashboard>)
  - **API Documentation:** <https://your-railway-url/docs> (auto-generated by FastAPI)
  - **Backend README:** `/home/ubuntu/basketball_app/python-backend/README.md`
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## 📞 Need Help?

1. **Check logs:** Railway → Deployments → View Logs
  2. **Read full guide:** `PYTHON_BACKEND_DEPLOYMENT_GUIDE.md`
  3. **Railway support:** [railway.app/help](https://railway.app/help) (<https://railway.app/help>)
  4. **GitHub issues:** Report issues in your repository
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**Quick Deploy Guide Version:** 1.0.0

**Last Updated:** December 4, 2025

**Platform:** Railway (Recommended)

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## ✓ Deployment Checklist

Use this to track your progress:

- [ ] Railway account created
- [ ] Repository connected
- [ ] Root directory set to `python-backend`
- [ ] 5 environment variables added
- [ ] Public domain generated
- [ ] Deployment succeeded (green status)
- [ ] `/health` endpoint tested
- [ ] Frontend environment variable updated
- [ ] Frontend redeployed
- [ ] CORS configured correctly
- [ ] Integration test passed

**All checked? 🎉** You're ready to go!