🚀 RENDER DEPLOYMENT GUIDE - 5 MINUTES

✅ QUICK DEPLOY (Recommended)

1. Go to Render Dashboard

https://dashboard.render.com/

2. Click "New +" → "Web Service"

3. Connect GitHub Repository

- Repository: `Counterbalance-Economics/vctt-agi-engine`
- Branch: `main`

4. Configure Service

```
Name: vctt-agi-engine
Runtime: Node
Region: Oregon (or closest to you)
Branch: main
Build Command: npm install && npm run build
Start Command: npm run start:prod
```

5. Add Environment Variables

Click "Advanced" → Add Environment Variables:

```
NODE_ENV=production
PORT=8000
OPENAI_API_KEY=your_openai_api_key_here
MAX_REPAIR_ITERATIONS=3
OPENAI_MODEL=gpt-4
OPENAI_TEMPERATURE=0.7
```

Database URL (if using Render Postgres):

```
DATABASE_URL=postgresql://user:password@host:5432/database
```

6. Select Plan

- Free Tier: Good for testing (spins down after 15 min inactivity)
- Starter: $7/mo (always on)

7. Click "Create Web Service"

8. Wait 2-3 Minutes

Render will:
- ✅ Clone repository
- ✅ Install dependencies (npm install)
- ✅ Build application (npm run build)

- ✅ Deploy to production
- ✅ Give you public URL: `https://vctt-agi-engine.onrender.com`

✅ VERIFICATION

Once deployed, test these endpoints:

```
# Health check
curl https://vctt-agi-engine.onrender.com/health

# Swagger docs
https://vctt-agi-engine.onrender.com/api

# Start session
curl -X POST https://vctt-agi-engine.onrender.com/api/v1/session/start \
  -H "Content-Type: application/json" \
  -d '{"user_id": "test", "input": "Hello"}'
```

🔧 TROUBLESHOOTING

Build Failed?

Check logs in Render dashboard → Logs tab

Database Connection Error?

Verify DATABASE_URL environment variable is set correctly

API Key Error?

Verify OPENAI_API_KEY is set in environment variables

📊 CONFIGURATION FILES

✅ `render.yaml` - Auto-detected by Render
✅ `.node-version` - Forces Node 18.18.0
✅ `.npmrc` - Engine strict mode
✅ `package.json` - Engines field for Node 18.x

🎯 NEXT STEPS AFTER DEPLOYMENT

1. **Get Backend URL** from Render dashboard
   - Example: `https://vctt-agi-engine.onrender.com`

2. **Update Frontend UI**
   ```bash
   cd /home/ubuntu/vctt_agi_ui
   ```

```
export VITE_BACKEND_URL=https://vctt-agi-engine.onrender.com
npm run build
vercel --prod --token CTzKecV7IAIveJ5XRzz3oY4t --yes
```

3. **Test Full Stack**
   - Frontend: https://vcttagiui.vercel.app
   - Backend: https://vctt-agi-engine.onrender.com
   - API Docs: https://vctt-agi-engine.onrender.com/api

🚀 DEPLOYMENT COMPLETE!

Total Time: 3-5 minutes
Status: Production Ready
Cost: Free (or $7/mo for always-on)