

AVATAR LABS

Innovative & Seamless AI Talking Heads

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TECHNICAL JOURNEY

- **NEXT.JS**
- **POSTGRESSQL & MONGODB**
- **INTEGRATION OF DIFFDUB & SMALL-E**
- **SETUP OF NGROK**
- **ROBUST VIDEOMATting IMPLEMENTATION**
- **UTILIZATION OF PRISMA**

☒ **MASTERED NEXT.JS API ROUTES**

☒ **DATABASE MANAGEMENT**

☒ **DEVELOPMENT OF APIS IMPLEMENTED WITH NGROK**

☒ **AI MODEL INTEGRATION**

KEY LEARNINGS IN DEVELOPMENT

CHALLENGES IN PROJECT IMPLEMENTATION

**CHALLENGING TO MASTER
UNFAMILIAR TOOLS**



**INSUFFICIENT EXPERTISE IN
CLOUD SYSTEMS**



**MODEL INTEGRATION REQUIRED
ADVANCED EFFORT**



**DEPLOYMENT LIMITED BY TIME
PRESSURE**



MODEL IMPLEMENTATION

Shifting to a New Architecture

INTEGRATED NGROK FOR LOCAL SERVER ACCESS

The integration of ngrok allows for seamless local server access, enhancing development efficiency.

1

SWITCH TO DIFFDUB MODEL

Replaced DiffTalk with DiffDub

2

3

INTEGRATION OF ROBUST VIDEO MATTING

Integration of advanced video matting techniques for background removal for output videos.

MILESTONE ACHIEVEMENTS

- **CONFIRMED CORE PIPELINE FUNCTIONALITY**
- **ACHIEVED VIDEO QUALITY**
- **DEPLOYMENT REMAINS INCOMPLETE**

MODEL DEEP DIVE

SELECTED MODEL: DIFFDUB

ALTERNATIVE MODEL: VQ-VAE-2

ALTERNATIVE MODEL: STYLEGAN

ALTERNATIVE MODEL: SYNCTALK

ALTERNATIVE MODEL: SADTALKER