CareerROBO

Human-Centered Interaction in Robotics
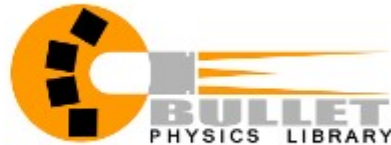
Riddhesh More

Shubham Gawande

Hochschule
Bonn-Rhein-Sieg
University of Applied Sciences

b-it
Bonn-Aachen
International Center for
Information Technology

Requirements

- numpy

- pybullet

- qibullet

- pydub

- gtts

- opencv-python

- RASA

Architecture

Hardware:

- Microphone and speaker for audio input/output
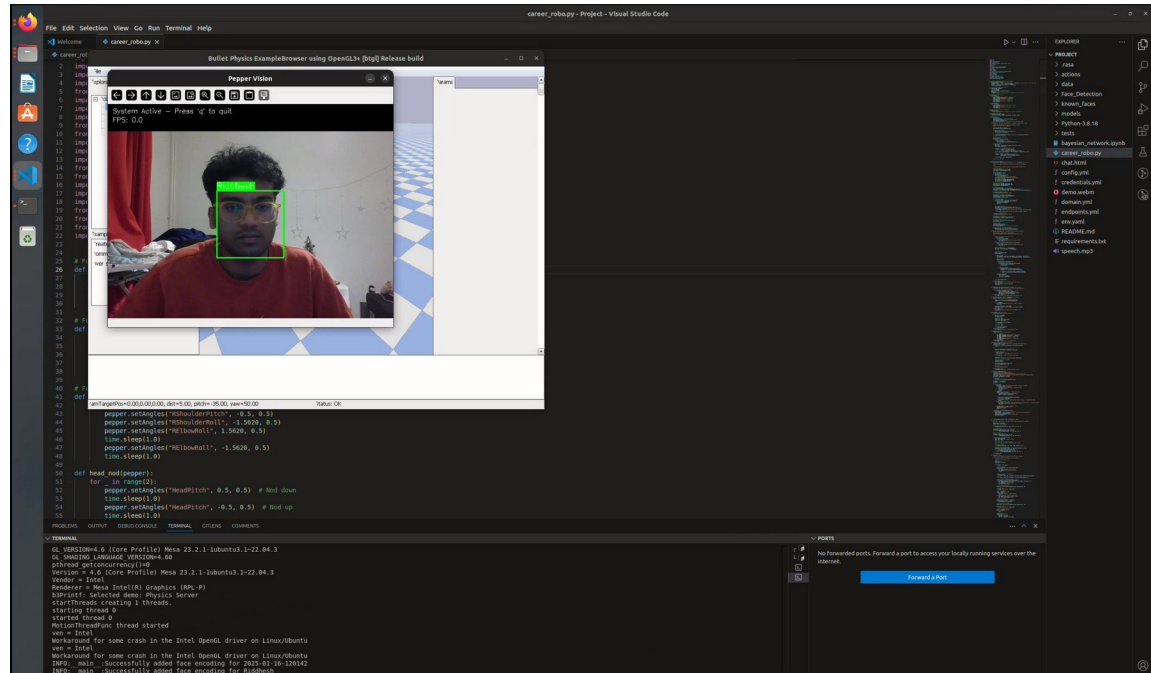
- Camera system for facial recognition

Core Components:

- Facial recognition system processes video input

- Rasa chatbot handles conversations (Core for dialog, NLU for language processing)

- API middleware connects Pepper to Rasa

Interaction Flow: Student face detection → Recognition → Personalized greeting → Conversation
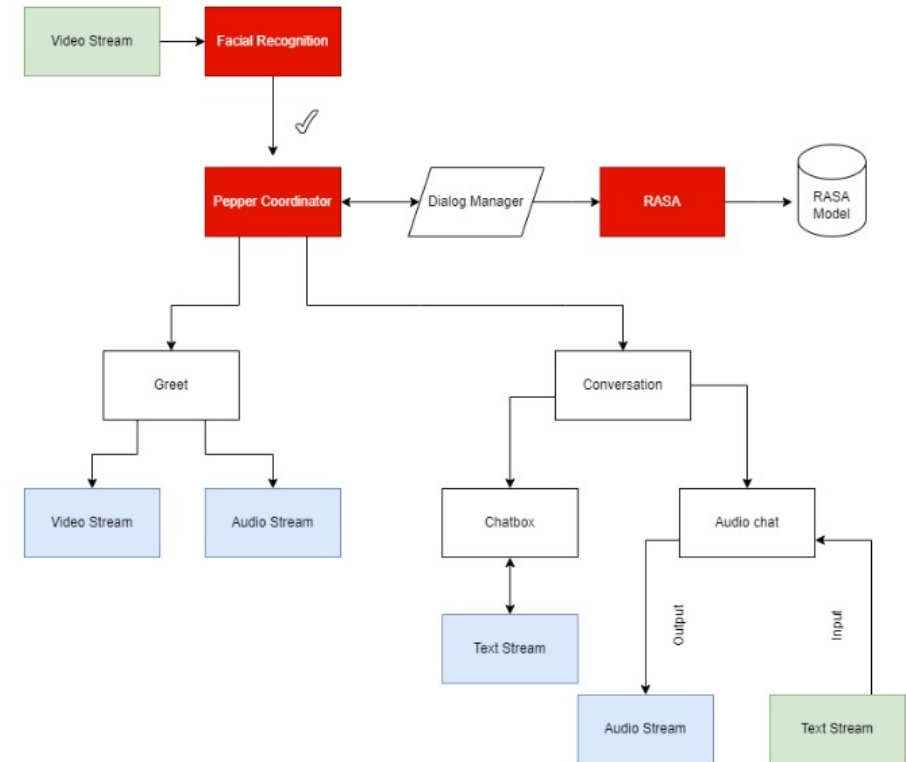
Demo

Technical Challenges

Environment Setup Challenges:

- Python dependency conflicts in Ubuntu

- Package compatibility issues

- Environment variable management

Solutions Implemented:

- Virtual environment isolation

- Manual package version resolution

- Comprehensive documentation of setup steps

Hochschule
Bonn-Rhein-Sieg
University of Applied Sciences

b-it Bonn-Aachen
International Center for
Information Technology

Ethical Considerations

Privacy Protection:

- Secure handling of face detection data

- No permanent storage of user information

Bias Mitigation:

- Regular review of career recommendation algorithms

- Diverse career options database

User Trust:

- Transparent recommendation process

- Clear communication of system capabilities

- Respectful handling of user preferences and choices

Hochschule
Bonn-Rhein-Sieg
University of Applied Sciences

b-it
Bonn-Aachen
International Center for
Information Technology

Thank You