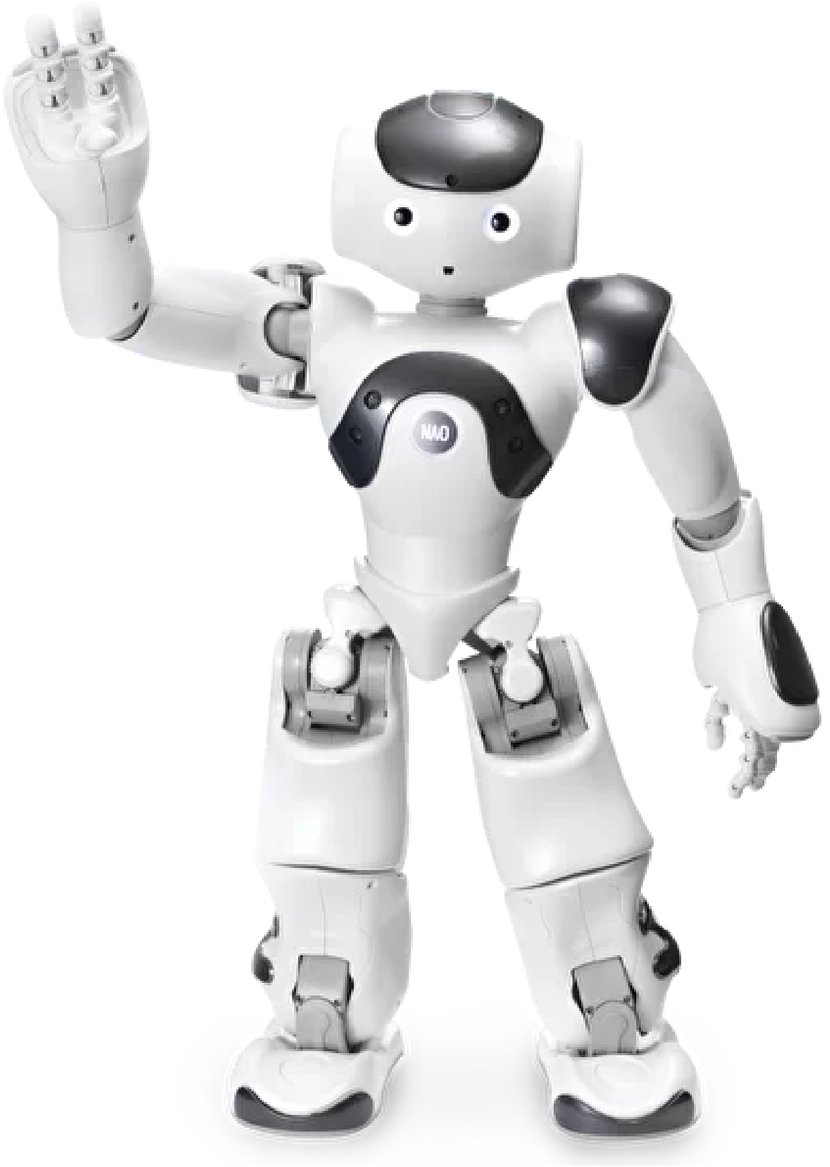
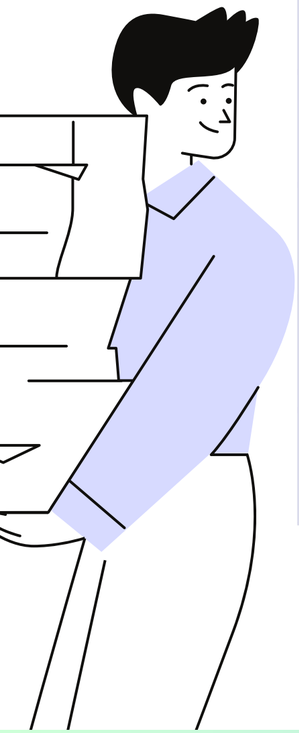
CHATGPT AND NAO ROBOT



NA-Redback

COMP90082 Software Project

Team



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Test Lead	Chien-Pu Lin (Jeff)
Quality Lead	Yangchen Shen (Shen)

Client

Dr

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Computing and Information Systems

Agenda

PROJECT BACKGROUND

ACHIEVEMENTS

PROJECT REFLECTION

TECH STACKS

LIVE DEMO

FUTURE DEVELOPMENT PLANS

Achievements

1. Integration of 3 previous projects
2. UI upgrade
    - Migration from PyQT to web
    - AI-powered image generation
3. Enhancement of robot interaction using ChatGPT
    - Moderation filter
    - Motions/gestures
4. Refinement of learning experience
    - Identification of child’s struggling letter
    - Personalised words generation in line with kid’s interest

Project Background

The CoWriter Project

- Children to teach handwriting to a social robot (NAO)
- “Learning by teaching”

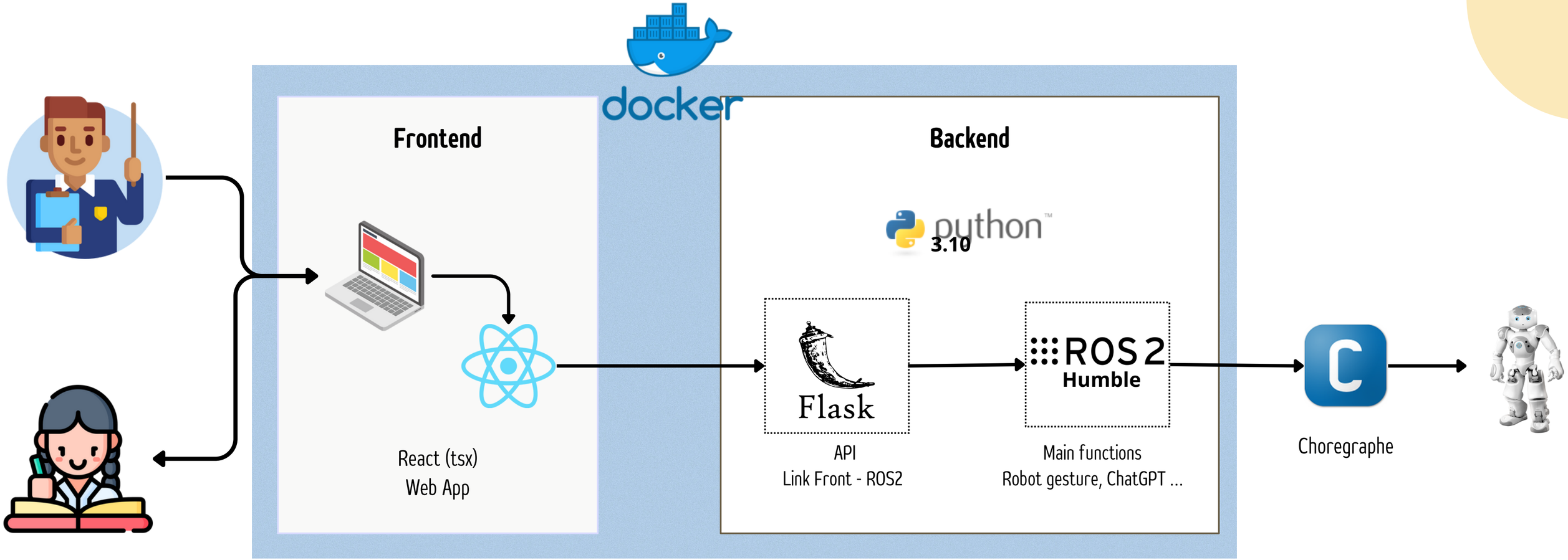
Users

- Children (5-10 years old)
- Parents
- Researchers

Image source: https://github.com/CHRI-Lab/cowriter_letter_learning

←

Tech Stack


docker
Frontend
Backend
python
3.10
Flask
ROS 2
Humble
React (tsx)
Web App
API
Link Front - ROS2
Main functions
Robot gesture, ChatGPT ...
Choregraphe

Live Demo - Scenario 1

Scenario 1: A 9-year-old kid with ADHD and would not be interested in learning things outside of his interest

Live Demo - Scenario 2

Scenario 2: A 5-year-old kid is struggling with writing a letter “o”

Project Reflection

Challenges & Obstacles

- Teams unfamiliar with ROS
- Workload underestimation for the integration
- Maintenance downtime of NAO

Lessons learned

- Exposure to ROS and working with a robot
- Experience with Docker

Future Development Plans

- Implement logging & annotation modules
- Explore the possibility of having a cross-platform UI
- Generate code for customised motions using ChatGPT

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Any Questions?

Thank you!