Tanut Treratanakulwong's

Project Portfolio

3 March 2020

NDCSYSTEM

Web-based CRM & ERP for dental clinic
- In-house development (family business)
- First release in May 2019, currently in production
- ~20 daily active terminal/users
- 3000 customer transactions monthly
- 14 treatment rooms, 18 assistants, 24 doctors

<u>Contribution</u>
Design, Code, Training, Infrastructure design, Deployment

<u>Technology</u>
React, Node.JS, Nginx, MySQL, Linux Server

<u>Key Features</u>
Patient Info
Royalty program
Treatment record
Appointment
Recheck
Integration with x-ray viewer
Timecard system
Assistant reward/commission
K-Bank Compatible payroll export
Daily report
Client dashboard

PERFECT-MED

Web-based workflow for CT/MRI center
- First release in Dec 2019, currently in production
- ~300 daily active users
- 20GB of file uploads weekly
- Adopted by 25 CT/MRI stations all over Thailand

Contribution
Design, Code, Training, Infrastructure design, Deployment

Technology
React, Node.JS, Nginx, MongoDB, Linux Server

Key Features
Asynchronous upload streaming for large file attachments (~1GB per file)
User-based authentication with JWT
Introduce a new workflow to streamline the work process
Daily / Monthly report
Issue Invoice, Diagnosis report
Excel export of certain reports

Low-Friction Tendon-Driven Robot Hand

Tendon-driven underactuated hand that is capable of fingertip pinching by utilizing innovative coupling mechanism

- 11-DOF design driven with 12 actuators
- Innovative coupling and carpal tunnel 3D pulley routing
- 2-years R&D during master course at University of Tokyo
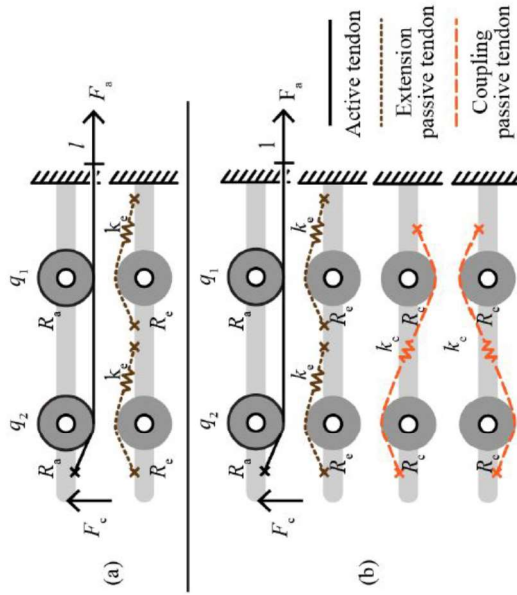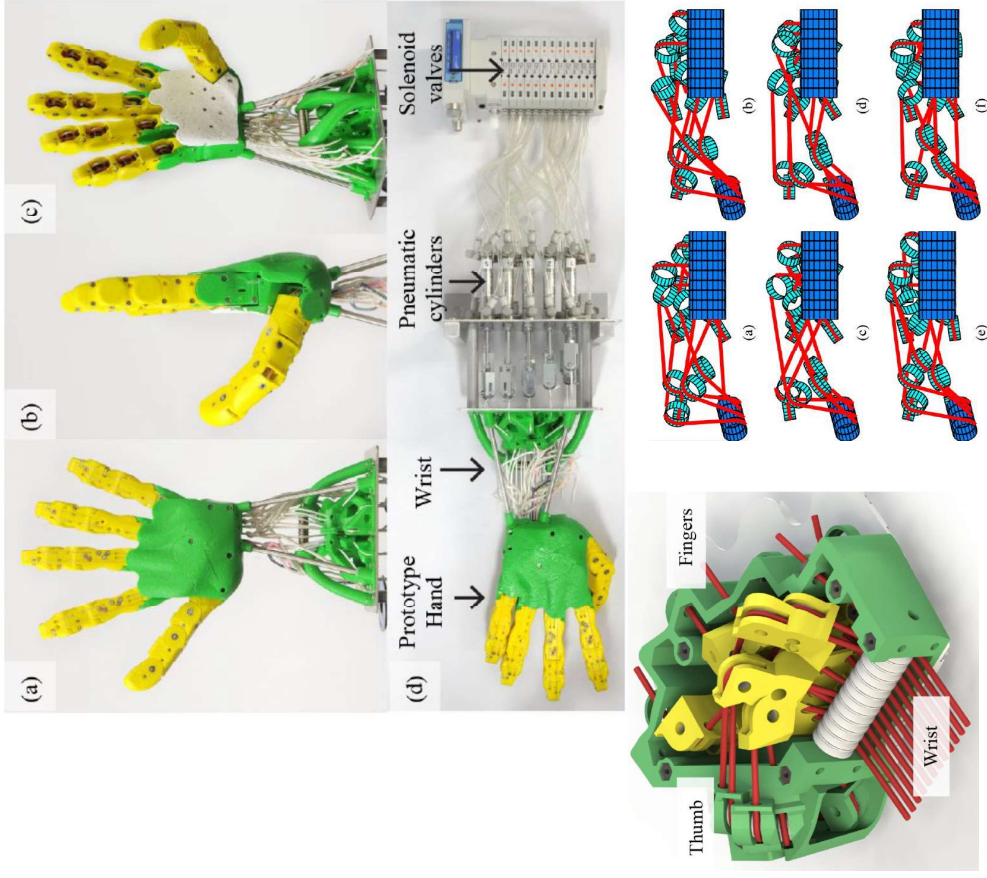- Publication presented in IEEE ICRA Conference 2014

(a) (b) (c)

(d) Prototype Hand — Wrist — Pneumatic cylinders — Solenoid valves

Thumb — Fingers — Wrist

Fig. 1. Tendon routing of the conventional underactuated hand (a), and our proposed coupling for underactuated hand (b).

Active tendon
Extension passive tendon
Coupling passive tendon

4-LEGGED PET ROBOT

Mechanical design of 16-DOF pet robot about the size of mid-sized dog. Consists over 1000 mechanical parts.

- Low-friction tendon driven mechanism
- Flexure design tension sensor
- FEM simulation for critical joints / parts
- Drawing ready for machining production