JAN LAU

Candidate for Master of Applied Science
Specialization in Biomedical Engineering
jan.lau@uwaterloo.ca
LinkedIn | UWaterloo Scholar | Website

RESEARCH FOCUS

- Modifying an existing lower-limb robotic exoskeleton to be suitable for geriatric users
- Developing and evaluating a novel protocol to improve human-exoskeleton interaction

RESEARCH INTERESTS

- Wearable robotics
- Optimal control
- Assistive technologies
- Wearable robotics acceptance in elderly people
- Human movement

EDUCATION

Candidate for MASc in Systems Design Engineering **Waterloo, Canada**
University of Waterloo, expected to graduate in Aug. 2022
Specialization in Biomedical Engineering

BASc in Biomedical Engineering **Waterloo, Canada**
University of Waterloo, 2020

RESEARCH EXPERIENCE

Master of Applied Science Candidate **Waterloo, Canada**
HCRMI Lab, University of Waterloo: Sep. 2020 to Aug. 2022 (expected date)

- Designing a new sit-to-stand trajectory and modifying an existing lower-limb exoskeleton for older adults
- Developed a novel protocol for improving exoskeleton usage familiarity in able-bodied, first-time users
- Presented study findings of the novel protocol in International Society of Biomechanics (ISB) 2021 Conference
- Collaborating with psychologists and researchers from Germany on improving geriatric mobility in the interdisciplinary consortium HeiAge
- Conducting a biomechanics study on chopstick usage

Undergraduate Research Assistantship Student **Waterloo, Canada**
Engineering Bionics Lab, University of Waterloo: Jan. 2018 to Apr. 2018

- Calculated identification rate from experimental data to evaluate biometrics algorithm
- Conducted literature research on behavioral biometrics
- Analyzed EMG data from signal processing MATLAB code to identify noise

Research Assistant **Waterloo, Canada**
Engineering Bionics Lab, University of Waterloo: Jan. 2017 to Apr. 2017

- Designed and 3D-printed a modular exoskeleton prototype to help people with Parkinson's Disease initiate gait
- Applied anthropometric data, engineering design methods, and mechanics calculations to exoskeleton design
- Performed Finite Element Analysis on Fusion 360 to determine stress profile

STARTUP EXPERIENCE / CAPSTONE PROJECT

Co-Founder **Toronto, Canada**

Cadera Inc.: Sep. 2018 to Jul. 2021

- Co-developed a physical simulator to train physicians to better detect and diagnose developmental dysplasia of the hip (DDH) in infants
- Awarded CAD60k and completed the Accelerator Centre Jumpstart program in 2021
- Conducted literature research on infant hip anatomy and DDH
- Designed and 3D-printed mechanical components for prototypes
- Developed business plan and managed budget

WORK EXPERIENCES

Assistant Pricing Analyst **Stuttgart, Germany**

Global Pricing, Philips Healthcare: Jan. 2019 to Aug. 2019

- Designed a competition tool for pricing intelligence on Qlik Sense
- Applied mathematical model to observe product sales trend as a foundation for determining price elasticity, customer segment identification, and product sales forecast
- Developed code to optimize product portfolio using the Extract-Transform-Load process

Marketing Communications Assistant **Hong Kong**

Marketing & Communication Department, IDS Medical Systems (HK) Co. Ltd.: Sep. 2017 to Dec. 2017

- Supported sales team in crafting medical devices product catalogue for Hong Kong market
- Collaborated with seven Asia offices to launch artefacts and internal programs to promote the company branding
- Trained Hong Kong sales team to operate promotional materials for marketing events

LEADERSHIP

Orientation Leader **Waterloo, Canada**

Engineering Orientation Week, University of Waterloo: Sep. 2016 to Sep. 2019

- Co-managed 8 front-line leaders and over 100 first-year students
- Ensured smooth logistic flow from one event to another
- Prepared engineering activities and team-building events with other student volunteers

Team Lead **Waterloo, Canada**

Biomechatronics Design Team, University of Waterloo: Jan. 2018 to Dec. 2018

- Delegated tasks amongst sub-team leaders to ensure sub-teams work towards their goal
- Gained a profit of over CAD550 in six hours through fundraising event
- Organized workshops to teach team members technical skills
- Facilitated a sub-team on deciding project scope with the Priority Criteria Matrix and Best-of-Class Chart

Chapter Lead **Waterloo, Canada**

eNable Waterloo, University of Waterloo: Sep. 2016 to Aug. 2017

- 3D-printed prosthetic hands to help children to perform daily tasks as part of the “Enabling The Future” initiative
- Promoted to Chapter Lead within 3 months due to outstanding leadership skills and teamwork
- Delegated tasks amongst team members to obtain optimal work efficiency
- Experimented with Fusion 360 to customize prosthetic hands for children depending on their needs

INTERESTS

- Martial arts (Karate and Muay Thai)
- Learning German