CHAINATEE TANAKULRUNGSON

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Portfolio: http://ctanakul.github.io/chainatee-portfolio

EDUCATION

Northwestern University — Evanston, Illinois
Master of Science in Robotics (GPA: 3.88/4.00) — Anticipated Dec 2017
Relevant Courses: Advanced Mechatronics, Computational Geometry, Machine Learning, ROS, Robot Kinematics, Lagrangian Dynamics

Chulalongkorn University — Bangkok, Thailand
Bachelor of Engineering in Mechanical Engineering (GPA: 3.56/4.00) — Jun 2011 - Aug 2015

WORK EXPERIENCE

Human Robotics Lab, Chulalongkorn University and Hospital — Bangkok, Thailand
Research Assistant, Mechanical Design and Market Research — May 2015 – Jul 2016
- Developed a prototype of a static wrist holder in CATIA for an exoskeleton with a mobile transmission system for Brachial Plexus Injury (BPI) patients whose arm movements are limited due to a nerve injury
- Led primary market research and contributed to final prototype which is currently undergoing clinical trial
- Provided technological assistance to the team

Siam Kubota Corporation Co., Ltd. — Chonburi, Thailand
Siam Kubota Challenge 2014 Production Engineering Intern — Mar – Jul 2014
- Designed a robust PLC logic ladder to minimize defects in tractor engine assembly line by safeguarding against the failure of torque engine nut
- Optimized engine assembly process by designing an improved procedure resulting in a 10-second reduction in production line

Bangkok Bank — Bangkok, Thailand
Student Intern — May 2015
- Developed process planning to help small size logistics solution providers adapt GPS into their business model

ENGINEERING PROJECTS

Robotic Catching Project — Evanston, Illinois
System Architect and Software Developer — Jan 2017 – Present
- Detect an object position in 3D with OpenCV and RGBD sensor
- Designed an algorithm and programmed software in Python to predict trajectory of a thrown ball based on detected position
- Designed Jacobian based endpoint controller algorithm for moving a robot arm to catch the ball
- Integrated all functionalities and operated through ROS

Self-driving Mechatronics Car Project — Evanston, Illinois
Developer — Jan 2017 – Present
- Designed a custom PCB with EAGLE PCB CAD for PIC microcontroller
- Programmed PIC software in C and communicated output of computer vision over the USB between the Android phone and PIC
- Designed and fabricated custom built chassis

Touchback Project: System for Recording and Replaying Textures on a haptic touchscreen — Evanston, Illinois
Mechanical Design and Fabrication Engineer — Jan - Mar 2017
- Fabricated test samples with varying texture properties in SolidWorks
- Used record player phonograph needle and amplifier to record sample textures
- Played back surface feature on haptic touchscreen allowing users to feel virtual texture
- Prototyped sinusoidal grating panel for recording material texture that can be played back on haptics screen and allow users to sense simulated surface roughness from vibration

Object Localizing Robot Project — Evanston, Illinois
Developer — Sep - Nov 2016
- Wrote software in Python to move Baxter, the collaborative manufacturing robot of Rethink Robotics, based on inverse kinematics service
- Integrated the software into the system in ROS which controls Baxter to localize, grab and move object, based on users command

LEADERSHIP

Little Builders Project — Bangkok, Thailand
Design Coach — Dec 2015 - Feb 2016
- Supervised high school student project to create smart and sustainable waste-collecting water wheel to improve the condition of the Phra Kanong canal

SKILLS

C/C++, Python, MATLAB, ROS (Robot Operating System), CATIA, SolidWorks, Linux, EAGLE PCB CAD, OpenCV, Mathematica, GIT, Android (Basic), Microcontroller (PIC32, Arduino)

AWARDS

- Tanakulrungson, C., Ativeerakul, C., Glankwahmdee, J., & Wannasuphoprasit, W. (2015, Dec). *Design and Development of a pinch rehabilitation device*. Conference talk presented at the International Conference on Mechanical Engineering by Thai Society of Mechanical Engineers, Petchburi, Thailand.
- 2013 Best Overall Design award for designing new Lilo and Stitch simulation game in Disney's Ultimate EnginEARing Exploration