

# Tanut Treratanakulwong

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Date of Birth 23<sup>rd</sup> December 1988

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## SKILLS

Robotics Engineer, Hardware, Software Engineer

Programming Language C#, TS (React, Angular, Vue), Unity, Node.JS, Python, C++, SQL, NoSQL, C (Microcontroller)  
Software Linux, Fusion 360, Solidworks, Blender, Matlab, Illustrator  
Language Thai (Native), English (Fluent), Japanese (Intermediate, Proficiency level N2)

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## ACADEMIC RECORD

**The University of Tokyo**, Tokyo, Japan Sep 2013  
Master of Engineering in Mechano-Informatics (Robotics), Under Japanese Government Research Scholarship  
Graduate school of Information Science and Technology (High-distinction master dissertation)

**The University of Pisa**, Pisa, Italy Feb 2013  
Research Visitor at the Research center "E. Piaggio".

**Chulalongkorn University**, Bangkok, Thailand Mar 2011  
Bachelor of Computer Engineering, Faculty of Engineering  
First-class honors. (GPAX=3.86, 3<sup>rd</sup> ranking of the Computer Engineering Department)

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## WORK EXPERIENCES

**T-Hive BV / Vanderlande Industries BV**, The Netherlands July 2022 to Now  
Senior Software Architect

- Develop web-based CAD application for AGV layout designer and simulation in React TS with Konva, Three JS Library
- Architect and develop in-house high performance 2D & 3D web rendering library.
- Converting Python application for WiFi simulation into containerize web-API and deployed in Kubernetes.
- Develop API gateway in C# interfacing client applications and fleet manager (FMS) and workflow engine (T-ONE).
- Lead software integration development team for Haneda Airport automatic towing-tractor in TICO Japan. (On-going)

**Toyota Material Handling (Thailand)**, Thailand Sep 2021 to Jun 2022  
Software Developer

- Develop web-based AGV layout designer using React TS. Deployed in Azure Kubernetes.
- Develop web-based 3D fleet tracker for AGV system using Unity Engine from scratch. Integrate WebGL with React / Vue / Angular web application
- Develop CI/CD pipeline for React web application and Unity projects.

**Lumio 3D**, Thailand Apr 2020 to Aug 2021  
Software Developer

- Develop machine vision application using Qt C++ and Halcon image processing library for defect inspections in factories. Target customers are packaging, food, and electronics industries.
- Develop crowd face detection and recognition on Linux computing boards. I have major contributions in face-embedding management in C++, front face detection algorithm in C++, python backend, UI design, and React application.
- Mechanical design of camera calibration jig, tilting table, selling together with Lumio H3™ Face Scanner.

**Freelance Programmer** Nov 2019 to Mar 2020

- Web-application for managing x-ray centers. Key features are asynchronous read/write for large file upload/download (30GB of data added to the system every week), online diagnosis platform for radiologist, notification via Line chatbot, and process flow redesigned. My contributions cover requirement collection, user-interface and system design, coding, testing, deployment, and training. The system is currently using in 30+ CT/MRI centers all over in Thailand with over 300 daily active users. Development stack: React, Node.JS, MongoDB, Linux server.
- Front-end developer for web-based import-export solution using Flutter, and Google Firebase (Database, Storage, Cloud Function).

**Nawarat Clinic**, Thailand  
Software Engineer and Operation Manager

May 2019 to Now  
Jun 2014 to Sep 2015

- Develop in-house CRM/ERP system for dental clinic using React, Node.JS, MySQL. Major features are customer's treatment records, royalty program, booking system, queuing system, management dashboard/reports and salary calculator.
- Run the operation of dental clinic with 14 rooms, 24 dentists, 18 staffs, and over 3000 customers/month.
- Planning and overseeing the construction to expand from 9 to 14 treatment rooms within 6 months in 2015.

**Mitsui & Co.**, Thailand  
Deputy Manager Business Development, Infrastructure Project Division

Sep 2015 to May 2019

- Business development with focus on infrastructure projects in Thailand, Myanmar, Laos, and Cambodia.
- Project due diligence on power plant project (hydropower, gas/captive/cogeneration power plant), LNG terminal, fulfillment business. Develop project structure and financial model.
- Coordinate and maintain good relationships with major big corporations in Thailand – PTT, TCC, CKP, EGAT.

**Portek International Pte Ltd**, Singapore  
Business Development Manager

Nov 2016 to Feb 2019

- Develop business in port sector engineering service sector. Main products are secondhand port equipment trading (QC, RTG, MHC), Automated Guided Vehicle (AGV), battery pack for mobile equipment, and etc.
- Seek for port operation concession opportunities in Asia market. Develop business plans and cash flow projection.
- Skills involved are proposal/contract preparation and review, project cash flow analysis, and subsidiary management.

**Anthrobotics Inc.**, Tokyo, Japan  
Mechanical Designer

Oct 2013 to Jun 2014

- Research and development of the consumer pet robot utilizing low-friction tendon-driven system and high force sensing capability. Major contributions are in the mechanical design of the robot with over 1000 parts.

**SCG Paper Plc**, Thailand  
3-Month Internship

Oct 2010 to Jan 2011

- Develop VBA Script for quality control process in corrugated paper box production line.

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## INTERESTS

Formula 1 Racing / Software Development / Mechanical Design / RC car & plane / Wood working

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## RESEARCH PAPER

Tanut Treratanakulwong, Hiroshi Kaminaga, Yoshihiko Nakamura, "**Low-Friction Tendon-Driven Robot Hand with Carpal Tunnel Mechanism in the Palm by Optimal 3D Allocation of Pulleys.**", In Proceedings of IEEE International Conference on Robotics and Automation, 2014.

Tanut Treratanakulwong, Hiroshi Kaminaga, Yoshihiko Nakamura, "**Monocoque Design of 3D-Printed Carpal Tunnel Mechanism for 11DOF Underactuated Robot Hand.**", In Proceedings of 31<sup>st</sup> Robotics Society of Japan, 2013. (This paper is written in Japanese)

Lertwiram, Sitthiya, Danupol Tanprayoon, Chonlatit Prateepmanovong, Tanut Treratanakulwong, Wachiraphan Charoenwet, and Pizzanu Kanongchaiyos. "**A design and implementation for ultrasound practice system for fetal echocardiography.**" In Proceedings of the 10th International Conference on Virtual Reality Continuum and Its Applications in Industry, ACM, 2011.