

Pongporn (Ken) Supa

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Education

University of Bristol

MSc in Robotics

Bristol, UK

Sept 2024 – Current

- **GPA:** 74/100, Expected Distinction
- **Thesis:** Whisker-Inspired Tactile Sensing for Bumper Drone under supervision of [Dr. Basaran Bahadir Kocer](#) [🔗](#)
- **Selected Coursework:** Bio-inspired Aerial Robotics, Robotics Fundamentals, Robot Learning and Teleoperation, Swarm Robotics, Machine Vision

Chulalongkorn University

BEng in Mechanical Engineering

Bangkok, TH

Aug 2017 – Aug 2021

- **GPA:** 3.63/4.00, First Class Honour
- **Selected Coursework:** Mechatronics (A), Automatic Control Systems (A), Dynamic System Simulation (A), Statistics (A), Linear Algebra and Differential Equation (A), Computer Programming (A)

Work Experience

Robotics Software Engineer

AI and Robotics Ventures, HORRUS project

Bangkok, TH

Apr 2022 – Aug 2024

- Achieved 95% success rate of 24/7 PX4 Ardupilot autonomous UAVs system operations by implementing a robust and real-time middleware using MAVLink protocol with asynchronous programming
- Redesigned and implemented reliable and high-performance backend services and APIs for real-time control and video streaming from UAVs in security service 5G drones
- Developed drivers to interface with cameras and to integrate with real-time object detection models and traffic analysis in a £7K government projects
- Designed and developed a coverage path-planning for aerial photogrammetry and path planning with constraint-based static geofences

Research Assistant: Modular Temperature-Controlled Syringe Pump Extruder for Soft Material 3D Printer under [Assoc. Prof. Ratchatin Charoen](#) [🔗](#)

Bangkok, TH

May 2021 – Oct 2021

Department of Mechanical Engineering, Chulalongkorn University

- Transformed a cartesian robot into the syringe-based soft material 3D printer, which is capable of controlling the temperature of the syringe and printing bed, helping secure £67K funding from the National Research Council of Thailand (NRCT)
- Designed PCBs for soft material printing benefits, including a high-temperature extruder, dual-temperature controller printing bed, and nozzle calibration module to address complex behavior of viscoelastic materials.
- Extended open-source 3D printer firmware to create custom control interfaces and generate feature-based trajectories with computer vision integration for adaptive printing based on real-time shape detection, leading to the prototype showcase at Thailand Inventor's Day

Projects

Learning from Demonstration on Robot Manipulation

Mar 2025 - Apr 2025

- Applied discrete Dynamic Movement Primitives (DMPs) to robot manipulator for trajectory planning by learning from demonstration dataset
- Utilised Gaussian Mixture Models (GMM) and Gaussian Mixture Regression (GMR) to generate trajectories from input dataset
- Designed PD controller for Leader-Follower Teleoperation system

Human-like vs. robot voice. Who gives better encouragement?

Mar 2025 - Apr 2025

- Integrated Text-to-Speech AI and Co-verbal gestures to NAO robot, enabling human-like behavior

Adaptive Point-Tracking Control of Multi-Robots Box Pushing

[Github repo](#) 

- Proposed and developed Adaptive Point-Tracking Control algorithm in a cooperative multi-mobile robot system box-pushing problem to maintain straight line trajectory, and minimise deviation in box trajectory
- Employed PID speed controller on mobile robots and high-pass filter on gyroscopic data processing

Search & Rescue in Mobile Robot

[Github repo](#)  [Youtube](#) 

- Designed and Developed Finite-State Machine to perform sensor calibration routine, obstacle avoidance and search and rescue operation on a known map
- Implemented dead reckoning method for localisation, and pose correction using prior knowledge of the environment
- Employed PID speed controller on mobile robots and low-pass filter in speed estimation

Apple Counting in Orchards

Dec 2024 - Jan 2025

- Compared the performance of apple counting, detecting, and localising tasks between conventional image processing and machine learning methods
- Designed and implemented image processing pipeline using color, geometric, and texture features for apples in orchards, which are susceptible to varying light conditions

Teachings

Teaching Support in Visual Analytics Course

Jan 2025 - May 2025

- Demonstrated and led tutorial sessions on data visualisation and statistical methods

Teacher Assistant in Manufacturing Process Course

Mar 2022

- Prepared courseware/engineering workshops. Lectured on how 3D printing settings and parameters affect printing quality

Skills

Programming languages: Python, C/C++, MATLAB, Simulink

Software: Git, Docker, ROS2, OpenCV, PyTorch, PX4, QGroundControl, RViz, Gazebo

Hardware: Proficient in digital fabrication for rapid prototyping, PCB design, CAD, Fusion360

Honors & Awards

Bristol Award Plus, *University of Bristol*

Mar 2025

Think Big Scholarship Award Recipient, *University of Bristol*

Sept 2024

PTTEP Innovation Award, Silver Award, *Autonomous Offshore Drone System*

July 2024

Spotlight on New Technology Awards, *OTC Asia 2024, AI and Robotics Solutions for Offshore Digitalisation*

Feb 2024

Invited speaker on Robotics & AI Bootcamp, *Chula Engineering NITAD 18*

Mar 2022

References

Dr Basaran Bahadir Kocer

Lecturer

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