THOMAS UNG

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About Me

Qualities	Curious – Ambitious – Fast learner – Takes initiatives – Communicate a lot
Languages	French (Native) – English (Fluent) – Mandarin (HSK2) – German (A2) – Spanish (A2)
Programming Languages	C++ – Rust – Typescript – Go – Python – JavaScript – Java – C
Web	Node.js – Deno.js – Aleph.js – Laravel – Next.js – Yew.rs – Dioxus.rs
Database	SGBD MariaDB – MySQL – Postgresql – SQLite – Redis
Other tools/Framework	Neovim – Git – CMake – Docker – Kubernetes – ROS1/2 – Pytorch – Unreal Engine
Relevant Coursework	Cloud computing – Algorithm optimisation – Distributed systems – Parallel architecture – Machine learning

Work Experience

Robotic Software Engineer
Mar 2024 — Now

PAL Robotics, Barcelona, Spain

· Software migration (ROS1/2, C++, Python, CMake)
· Development of a fleet management system (Open-rmf, ROS2)
· Networking optimisation for wireless distributed applications (DDS, Zenoh)
· Package management (Debian, Gitlab, Docker)
· Redesign of a RFID tag inventory project.
· Build digital twin environment (Gazebo)

Research Software Engineer in Robotics
Feb 2022 — Dec 2023

CNRS, Adelaide, Australia

· Technical Leader – Manager for 6 FTE / 1 year, project management for the Robocup@Home competition, task

management, make sure code guidelines are respected (Git, Github, Discord)
· Code refactor, create and maintain an OS (Gentoo Linux, Docker, c++, ROS, python, SQLite)
· Development of a digital twin environment in Unreal Engine (Unreal Engine 5, ROS, c++, Clang, CMake)
· Research of onboard Visual SLAM solutions for Pepper robot (ROS, c++)
· Software integration for the robocup project (ROS, c++, Whisper, YOLOv8, Bert, Spacy, Kaldi)
· Design of a web interface and research of an embedded easy to use and deploy framework for Pepper Tablet

Software engineer intern
Feb 2022 — May 2022

LAB-STICC, Locmaria-Plouzané, France

· Depth camera calibration for pepper
· Integration of a finite state machine as a scheduler for RoboCup tasks (6 months) (ROS, C++, Python)
· Research and integration on a stable onboard navigation solution for the robot Pepper
· Participation to RoboCup 2022 Bangkok with the team RoboBreizh (1rst place SSPL)
· Research and implementation of a navigation module for Pepper robot as part of the RoboCup@Home competition (Gazebo, ROS)

Projects

· 1rst place in the Robocup@Home SSPL in 2022 and 2023
· Video converter API (GCP, Kubernetes, Next.js, Flask,Prometheus)
· Othello min max AI (Go)
· Time zone converter (Rust)
· Advent of code (Rust)

Education

Umeå Universitet, Umeå, Sweden

Master 2 Computer Science, Artificial Intellignece and algorithm optimization **Sep 2021 — Jan 2022**

Université de Bretagne Occidentale, Brest, France

Master Computer Science, autonomous, interactive and intelligent systems   **Sep 2020 — Sep 2022**

Publications

- Cédric Buche, Maëlic Neau, Thomas Ung, Louis Li, Tianjiao Jiang, Mukesh Barange, and Maël Bouabdelli. 2023. RoboBreizh, RoboCup@Home SSPL Champion 2022. In RoboCup 2022:: Robot World Cup XXV. Springer-Verlag, Berlin, Heidelberg, 203–214. https://doi.org/10.1007/978-3-031-28469-4_17
- Li, L., Neau, M., Ung, T., Buche, C. (2024). Crossing Real and Virtual: Pepper Robot as an Interactive Digital Twin. In: Buche, C., Rossi, A., Simões, M., Visser, U. (eds) RoboCup 2023: Robot World Cup XXVI. RoboCup 2023. Lecture Notes in Computer Science(), vol 14140. Springer, Cham. https://doi.org/10.1007/978-3-031-55015-7_23

References

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