Ben-Hau Chia

10F., No. 99, Tianxiang 1st St., Taoyuan Dist., Taoyuan City 330007, Taiwan
+886-930-079-520 chia.howard.sd@gmail.com linkedin.com/in/benhauchia github.com/chiabhoward

Education

National Taiwan University **Sep. 2021 – Jun. 2023**
M.S., Department of Computer Science and Information Engineering *Taipei, Taiwan*
- Advisor: Chung-Wei Lin
- Laboratory: Cyber-Physical Systems Laboratory
- Thesis: Cooperative and Secure Multi-Agent Positioning on Real Coordinates Based on Satisfiability Modulo Theories.
- GPA: 4.30/4.30; Rank: 1st (among 136 students)

National Taiwan University **Sep. 2017 – Jun. 2021**
B.S., Department of Computer Science and Information Engineering *Taipei, Taiwan*
- GPA: 4.18/4.30; Rank: 9th (among 124 students)

Publication and Submissions

1. **B.-H. Chia**, S.-T. Hou, S.-W. Lin, Y.-H. Chen, I.-C. Tseng, W. Li, C.-W. Lin, "Cooperative and secure multi-agent positioning on real coordinates based on satisfiability modulo theories," submitted to International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS), 2023 (under review).
   - Targeted cooperative positioning for multi-agent systems while considering positioning errors and attackers intentionally providing incorrect information.
   - Proposed two SMT-based approaches for reaching positioning consensus, improving the accuracies and runtimes for finding potential attackers respectively.
2. C.-P. Chien, **B.-H. Chia**, S.-C. Lin, C.-W. Lin, I. H.-R. Jiang, "Efficient passing-order decision for lane merging of connected and autonomous vehicles," submitted to IEEE Transactions on Intelligent Transportation Systems (T-ITS), 2023 (under review).
   - Targeted three-to-two lane merging problem and minimized the time needed for all vehicles to pass the merging point.
   - Proposed a DP-based algorithm for finding the sequence of passing vehicles and a strategy to speed up, striking a balance between the solution's quality and computation time.
3. C.-C. Fu, **B.-H. Chia**, and C.-W. Lin, (Invited) "Runtime software selection for adaptive automotive systems," in ACM/IEEE Asia South Pacific Design Automation Conference (ASP-DAC), pp. 748–752, Tokyo (Virtual), Japan, Jan. 2021. pdf
   - Considered upcoming environmental conditions of an automotive system and targeted the software selection problem.
   - Formulated the problem as a set cover problem with timing constraints and proposed a heuristic approach, increasing the successful rate of finding feasible solutions for runtime computation and decision.

Experience

National Taiwan University **Feb. 2021 – Present**
Research Assistant (Jul. 2023 – Present) *Taipei, Taiwan*
- Focus positioning problem with weakly-hard constraints in a multi-agent system.

Teaching Assistant (Feb. 2021 – Jun. 2023)
- Digital System Design and Laboratory (Spring 2021, 2023); Operating Systems (Spring 2022); Introduction to Intelligent Vehicles (Fall 2021).

Industrial Technology Research Institute **Oct. 2021 – Jun. 2022**
Assistant Software Engineer *Hsinchu, Taiwan*
- Collected and verified over 10,000 images as training data from *rosbag* and updated datasets for model training.
- Fine-tuned *YOLOv3* models for self-driving buses with newly collected data and achieved a 90% average accuracy.
- Upgraded *ROS* version for data alignment between the camera node and the lidar node.

Honors

- Member of Phi-Tau-Phi Scholastic Honor Society (Top 3% Graduate Students) *Jun. 2023*
- The 2nd Place, TSMC x Microsoft Careerhack (Group AI Chatbot) *Jan. 2021*
- Two-Time Dean's List Awards (Top 5% Students) *Apr. 2018, Oct. 2021*

Extracurricular Activities

- General Referee in Intelligent Ironman Creativity Contest, Ministry of Education *Apr. 2019 – Present*
- Member of CSIE Dept. Softball Team, NTU *Sep. 2017 – Present*
- Captain of CSIE Dept. Softball Team, NTU *Jun. 2019 – May. 2020*