Vincent, Kuo-Chun Huang 黃國郡

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Professional Summary

1. Layer 1 Software Engineer
2. Published an article on international journal as a 1st author about constructing a system for robotic path planning
3. Experienced in several electric control and computer engineering projects

Awards & Publications

【Special Performance】

2019.2	Presidential Award	1st
2018.9	Presidential Award	1st
2018.2	Presidential Award	3rd

【Certification】

2018.1 Automation Engineer
By Taiwan Automation Intelligence and Robotics Association (TAIROA)

【Conference】

Kuo-Chun Huang , Po-Yu Lin, Jie Wang, Feng-Li Lian, " **Cyber-Physical Simulation Platforms for Generating Rich Data and Evaluating Control Tasks** ," in Proceedingsof the 17th International Conference on Automation Technology, Hualien, Taiwan, Nov. 2020

Kuo-Chun Huang, Feng-Li Lian, " **An Integrated Sensing and Planning Approach for Outdoor Autonomous Lawn Mowers in Irregular Environments** ," in Proceedings of CACS International Automatic Control Conference, Chiayi, Taiwan, Nov. 2021 (Best conference paper)

【Journal】

Kuo-Chun Huang , Feng-Li Lian, Chien-Tung Chen et al. " **A novel solution with rapid Voronoi-based coverage path planning in irregular environment for robotic mowing systems** ," *International Journal of Intelligent Robotics and Applications* , 5(4): 558-575, DOI: https://doi.org/10.1007/s41315-021-00199-8 , Dec. 2021

Projects

- PID Feedback - Table Tennis Robot (Matlab, Arduino)
  Constructed a 92% stable path and curl for athlete to pratice table tennis based on GUI system
  X 2 DETAIL>

- Cyber-Physical System for Robotic Arm (C#, Unity)
  Deliverd a Cyber-Physical System with 70% accuracy to control robotic arm (UARM) by Gesture Movement using Kinect Images through software interrupts between Unity and pratical world
  X 2 DETAIL>

- Embedded System - Intelligent Rubbish (C)
  Established a Intelligent Rubbish with 95% accuracy based on STM32 Arm Cortex MCUs through software interrupts and timer
  X 2 DETAIL>

- 2D Adventure Game (C#, Unity)
  Built a 2D Adventure Game and accomplished each of API, including attack, timing, UI/UX, the motion of monsters
  X 4 DETAIL>

More Portfolio (CAD)

Technical Skills

Programming	Python, Matlab, C/C++/C#, Java, HTML, JavaScript, CSS, Angular, jQuery
Others	Linux(Ubuntu), Git, ROS, Pytorch, SolidWorks, AutoCAD

Education

- National Taiwan University (NTU)
  Master of Science in Electrical Engineering
  2019.9 - 2021.8 (GPA : Overall : 4.04 / 4.3)
  Courses: Algorithm, Operating System, Machine Learning, Computer Vision, Digital Signal Processing Game Programming
  Thesis: An Obstacle Avoidance Control System Using Boustrophedon Motions and Rapid Voronoi Diagram Combined with Feedback Coverage Planning
  Outstanding thesis award of Chinese Automatic Control Society

- National Chiao Tung University (NCTU)
  Bachelor of Mechanical Engineering
  2015.9 - 2019.1 (Early Graduation)
  GPA : Overall 3.92 / 4.3 ; Last 60 Credits : 4.18 / 4.3
  Courses: Microcomputer, Image Processing, Robotics

Work Experience

【Full-Time Job】

- MediaTek
  5G NR Protocol Stack Software Engineer
  2021.09 - Now (Hsinchu, Taiwan)
  1. 5G/4G modem power optimization/analysis
     - PHY layer low power feature development & analysis
     - Rx/Tx MIMO antenna control for power/performance optimization
     - Experience in 5G Equipment operations
     - Develop 5G network simulator for verifying modem UL behavior
     - Familiar with 3GPP spec: 38.211~38.214, and 38.331

- Galaxy Software Services
  Assistant Programming Engineer
  2019.01 - 2019.05 (Taipei, Taiwan)
  1. Constructed the website form and developed UI/UX based on JavaScript(jQuery), Angular, java, kendo, bootstrap
  2. Finished the basic function, Create, Read, Update, and Delete (CRUD) through Ajax

【Intenship】

- URSrobot
  Industry–Academia Collaboration
  2019.10 - 2021.07 (Taipei, Taiwan)
  1. Developed an Obstacle Avoidance System for outdoor robot (mower) using Boustrophedon motions and the Rapid Voronoi diagram combined with Feedback Coverage Path Planning algorithm (Python) based on GPS, IMU, Odometry on Robot Operating System (ROS)
  2. Experimented more than 227 cases, including National Theater, Daan Forest Park, and Juming Museum.
  3. Achieved 3x quicker on computation time and 1.2x more efficient compared to the existing solution from international journal (BA*, BCD, TWPS)

- Syntec
  2017.07 (Hsinchu, Taiwan)
  2017.08 (Suzhou, China)
  1. Implemented a production line automation project based on PLC, MACRO, eHMI for workpiece shipment inspection
  2. Distributed cable for robot arm, three-axis measuring machine and Computer Numerical Control (CNC)