

Tung-Cheng Wu

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EXPERIENCE

- **DENSO International America, Inc.** [🌐] Nov 2024 - Present
Research Engineer Pittsburgh, PA, USA
 - Develop motion planning algorithm for autonomous driving system
- **Carnegie Mellon University** [🌐] Nov 2024 - Present
Visiting Researcher Pittsburgh, PA, USA
 - **Research Topic:** Autonomous driving and uncertainty quantification
- **DENSO Corporation** [🌐] Apr 2020 - Nov 2024
Research Engineer Tokyo, Japan
 - Develop a DNN-based algorithm for advanced driver assistance systems. This technology can forecast the lane-changing and cut-in intentions of surrounding vehicles early. It had conducted PoC and been transferred to the product team.
- **Industrial Technology Research Institute** [🌐] Jul 2018 - Sep 2018
Intern Hsinchu, Taiwan
 - Develop a DQN-based navigation algorithm for quadcopter

EDUCATION

- **National Cheng Kung University** Sep 2017 - Jun 2019
Master of Science in Engineering Science, GPA: 4.1 / 4.3 (best 0.7%) Tainan, Taiwan
 - **Thesis topic:** Design new updating strategy to improve deep reinforcement learning
 - **Major:** Path planning, Uncertainty quantification
- **National Cheng Kung University** Sep 2013 - Jun 2017
Bachelor of Science in Psychology, GPA: 3.76 / 4.0 Tainan, Taiwan
 - **Major:** Computational cognitive neuroscience, Statistical learning theory

PUBLICATIONS

< Journal >

1. Ying-Hsun Lai, **Tung-Cheng Wu**, Chin-Feng Lai, Laurence Tianruo Yang, Xiaokang Zhou. (2020). **Cognitive optimal-setting control of AIoT industrial applications with deep reinforcement learning**. In *IEEE Transactions on Industrial Informatics*, vol.17, no.3, pp.2116-2123, March 2021. DOI: 10.1109/TII.2020.2986501

< Conference >

1. **Tung-Cheng Wu**, Shau-Yin Tseng, Chin Feng Lai, Chia Yu Ho, Ying Hsun Lai. (2018). **Navigating Assistance System for Quadcopter with Deep Reinforcement Learning**. In *1st International Cognitive Cities Conference (IC3)*, Okinawa, Japan, July 2018, pp. 16-19. DOI: 10.1109/IC3.2018.00013
2. **Tung-Cheng Wu**, Jon-Fan Hu, Shu-Ling Peng. (2017). **Influences of the Matching Effects of Cognitive and Emotional Factors on Attitude Change**, In *Proceedings of the Annual Meeting of the Cognitive Science Society*, London, United Kingdom, July 2017, Vol.39, pp.3877.

< Submission > (undergoing review process)

1. **Tung-Cheng Wu**, Alexandre Capone, Jeff Schneider (2026). **Enhanced Automatic Scenario-based Curriculum Generation with Realistic Driving Simulator**. Manuscript submitted for publication in *IROS (IEEE/RSJ International Conference on Intelligent Robots and Systems)*.

PATENT

< Provisional Patent > (undergoing Utility Patent Application)

1. **Tung-Cheng Wu**, Alexandre Capone, Jeff Schneider (2025). **Traffic Density and Episode Length-Based Curriculum Learning for Generative Driving Simulators**. Registration Date: Sep 2025.

SKILLS

- **Programming Languages:** Python, Matlab, ROS, C++, R
- **Data Science & Machine Learning Toolkit:** PyTorch, TensorFlow, Keras, sk-learn
- **Other Tools & Technologies:** LaTeX, git
- **Research Skills:** Calibration, Data collection

HONORS AND AWARDS

- **Excellent Master Thesis** Dec 2019
Institute of Information & Computing Machinery
◦ Excellent paper of CS theses in the same year from entire country 
- **Excellent Paper Award** Sep 2018
International Cognitive Cities Conference
◦ One of four excellent papers
- **Scholar Award** Jul 2018
Department of Engineering Science
◦ Awarded to 5% best students across entire department

ADDITIONAL INFORMATION

- **Languages:** Chinese (native), English (fluent), Japanese (intermediate)
- **Interests:** Swimming, Hiking, Real-Time Strategy (RTS) game

REFERENCES

1. **Shinya Tanaka**
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2. **Jeff Schneider**
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4. **Chin-Feng Lai**
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5. **Jon-Fan Hu**
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National Cheng Kung University
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Relationship: Advisor during BS