

# Tuyen P. Le | Resume

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## Education

<b>Kyung Hee University [Link]</b> <i>Master and Ph.D.</i> Dissertation: Deep Hierarchical Reinforcement Learning Algorithms in Partially Observable Markov Decision Processes	<b>South Korea</b> 2014/03–2019/02
<b>HoChiMinh City University of Technology [Link]</b> <i>Bachelor</i> Honor program	<b>Ho Chi Minh City</b> 2008–2013
<b>Luong Van Chanh Gifted High School</b> <i>Diploma</i> Subjects taken: Mathematics, Physics, Chemistry, English ...	<b>Phu Yen province</b> 2005–2008

## Research Interest

I'm interested in applying various machine learning techniques (especially reinforcement learning) to real-world problems such as finance, logistics, robotics and manufacturing.

## Experience

<b>Professional</b>	
<b>AgileSoDA [Link]</b> <i>Position: Senior Researcher (Team Leader), R&amp;D Department</i>	<b>Seoul City</b> 2019–Present
<b>KMS Technology Vietnam [Link]</b> <i>Position: Software Engineer, R&amp;D Department</i>	<b>Ho Chi Minh City</b> 2013–2014
<b>Miscellaneous</b>	
<b>Recobell (acquired by Yello Mobile) [Link]</b> <i>Position: Intern, IT department</i>	<b>Seoul City</b> 2015–2016
<b>Polliwog Corp (acquired by Altair). [Link]</b> <i>Position: Intern, IT department</i>	<b>Seongnam City</b> 2014–2015
<b>VNG Corporation. [Link]</b> <i>Position: Intern, Web development division</i>	<b>Ho Chi Minh City</b> 2012–2012
<b>Global CyberSoft (acquired by Hitachi). [Link]</b> <i>Position: Intern, R&amp;D Department</i>	<b>Ho Chi Minh City</b> 2012–2012
<b>FPT Information System (FIS). [Link]</b> <i>Position: Intern, Solution Division</i>	<b>Ho Chi Minh City</b> 2011–2011

## Honors and Awards

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- 2022: Top 20 nominations for the Golden Globe Science and Technology Award ([Link](#))
- 2020: Third prize DACON competition related to manufacturing optimization ([Link](#))
- 2008-2013: Talented engineer program (a.k.a. honor program) at HCMUT.
- 2008-2019: University scholarship from HCMUT and KHU.

## Talks

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- 2019: Asian Tech Summit ([Link](#))

## Scientific Community Service

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Here is the list of conferences and journals, which I have served as a reviewer:

- IEEE Robotics and Automation Letters (RA-L)
- International Conference on Artificial Intelligence and Statistics (AISTATS)
- IEEE Access
- IEEE Conference on Systems, Man, and Cybernetics (IEEE SMC)
- International Conference on Ubiquitous Robots (UR)
- International Conference on Future Data and Security Engineering (FDSE)

## Computer skills

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**Programming Languages:** Python, Java, C++, **Tools:** Pycharm, Visual Studio, Eclipse, Visual C#, Matlab, Javascript, Git

**Libraries:** Deep Learning (Tensorflow, Pytorch), **Platforms:** Window, Mac, Ubuntu, AWS, iOS, Jupyter, OpenCV, Anaconda, Android

## Publications

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### International Workshops

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- [1] **Tuyen P. Le**, Cheolkyun Rho, Yelin Min, Yong Cha, and Daewoo Choi. A deep decision-making framework for fraud detection. *Workshop on Robust AI in Financial Services: Data, Fairness, Explainability, Trustworthiness, and Privacy, NeurIPS*, 2019.

### Patents

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- [2] **르 팜 투엔**, 노철균, 이성령, and 민예린. Hierarchical decision agent. KR(10-2169876), Jun 2021.
- [3] **르 팜 투엔**, 노철균, 이성령, 민예린, 이동수, and 정석규. Apparatus and method for generating decision agent. KR(10-2257082), May 2021.
- [4] **르 팜 투엔**, 민예린, 김준호, 윤도균, and 최규원. Apparatus and method for reinforcement learning based on user learning environment in semiconductor design. KR(10-2413005), Jun 2022.
- [5] **르 팜 투엔**, 민예린, 김준호, 윤도균, and 최규원. Reinforcement learning apparatus and method for optimizing position of object based on semiconductor design data. KR(10-2416931), Jun 2022.

- [6] **르 팜 투엔** and 이동현. Deep reinforcement learning apparatus and method for pick and place system. KR(10-2416931), Dec 2021.
- [7] **투엔**, 노철균, and 민예린. System and method for classifying base on generative adversarial network using labeled data. KR(10-2093079), Mar 2020.
- [8] **투엔**, 노철균, and 민예린. System and method for classifying base on generative adversarial network using labeled data and unlabeled data. KR(10-2093080), Mar 2020.
- [9] 노철균, 민예린, and **투엔**. System and method for classifying fraudulent loans based on reinforcement learning. KR(10-2148880), Aug 2020.
- [10] 노철균, 민예린, and **투엔**. System and method for classifying payments based on reinforcement learning. KR(10-2105276), Oct 2020.
- [11] 노철균, 이성령, 민예린, and **르 팜 투엔**. Apparatus and method for performing reinforcement learning using conditional episode composition. KR(10-2169876), Oct 2020.

#### International Journals.....

- [12] SeungYoon Choi, **Tuyen P. Le**, Quang D Nguyen, Md Abu Layek, SeungGwan Lee, and TaeChoong Chung. Toward self-driving bicycles using state-of-the-art deep reinforcement learning algorithms. *Symmetry (IF:2.713)*, 11(2):290, 2019.
- [13] Md Layek, AFM Uddin, **Tuyen P. Le**, TaeChoong Chung, Eui-Nam Huh, et al. Center-emphasized visual saliency and a contrast-based full reference image quality index. *Symmetry (IF:2.713)*, 11(3):296, 2019.
- [14] **Tuyen P. Le**, Vien Anh Ngo, P. Marlith Jaramillo, and TaeChoong Chung. Importance sampling policy gradient algorithms in reproducing kernel hilbert space. *Artificial Intelligence Review (IF:8.139)*, Oct 2017.
- [15] **Tuyen P. Le**, Cheolkyun Rho, Yelin Min, Sungreong Lee, and Daewoo Choi. A2gan: A deep reinforcement-based learning algorithm for risk-aware in finance. *IEEE Access (IF:3.367)*, 9:137165–137175, 2021.
- [16] **Tuyen P. Le**, N. A. Vien, and T. Chung. A deep hierarchical reinforcement learning algorithm in partially observable markov decision processes. *IEEE Access (IF:3.367)*, 6:49089–49102, 7 2018.
- [17] **Tuyen P. Le**, Hoang Huu Viet, Sang Hyeok An, Seung Gwan Lee, Dong-Han Kim, and Tae Choong Chung. Univector field method-based multi-agent navigation for pursuit problem in obstacle environments. *Journal of Central South University (IF:1.716)*, 24(4):1002–1012, Apr 2017.
- [18] Hoang Huu Viet, Le Hong Trang, **Tuyen P. Le**, and Taechoong Chung. A shortlist-based bidirectional local search for the stable marriage problem. *Journal of Experimental & Theoretical Artificial Intelligence(IF:2.340)*, 32(1):147–163, 2020.

#### Domestic Journals.....

- [19] 최 승 윤, **Tuyen P. Le**, and 정 태 충. Deep deterministic policy gradient 알고리즘을 응용한 자전거의 자율 주행 제어. *Convergence Security Journal*, 18(3), 2018.

## International Conferences.....

- [20] Viet-Hung Dang, Ngo Anh Vien, **Tuyen P. Le**, and Taechoong Chung. A functional optimization method for continuous domains. In Yuanfang Chen and Trung Q. Duong, editors, *Industrial Networks and Intelligent Systems*, pages 254–265, Cham, 2018. Springer International Publishing.
- [21] M. A. Layek, N. Q. Thai, M. A. Hossain, N. T. Thu, **Tuyen P. Le**, A. Talukder, T. Chung, and E. N. Huh. Performance analysis of h.264, h.265, vp9 and av1 video encoders. In *2017 19th Asia-Pacific Network Operations and Management Symposium (APNOMS2017)*, pages 322–325, Sept 2017.
- [22] Quang Nguyen, Luan N. T. Huynh, **Tuyen P. Le**, and TaeChoong Chung. Ontology-based recommender system for sport events. In Sukhan Lee, Roslan Ismail, and Hyunseung Choo, editors, *Proceedings of the 13th International Conference on Ubiquitous Information Management and Communication (IMCOM) 2019*, pages 870–885, Cham, 2019. Springer International Publishing.
- [23] **Tuyen P. Le** and T. Chung. Controlling bicycle using deep deterministic policy gradient algorithm. In *2017 14th International Conference on Ubiquitous Robots and Ambient Intelligence (URAI2017)*, pages 413–417, June 2017.
- [24] **Tuyen P. Le**, A. Layek, N. A. Vien, and T. Chung. Deep reinforcement learning algorithms for steering an underactuated ship. In *2017 IEEE International Conference on Multisensor Fusion and Integration for Intelligent Systems (MFI2017)*, pages 602–607, Nov 2017.
- [25] **Tuyen P. Le**, DongHyun Lee, and DaeWoo Choi. A deep reinforcement learning-based application framework for conveyor belt-based pick-and-place systems using 6-axis manipulators under uncertainty and real-time constraints. In *2021 18th International Conference on Ubiquitous Robots (UR)*, pages 464–470, 2021.
- [26] **Tuyen P. Le**, Nguyen Dang Quang, SeungYoon Choi, and TaeChoong Chung. Learning a self-driving bicycle using deep deterministic policy gradient. In *18th International Conference on Control, Automation and Systems (ICCAS2018)*, Oct 2018.

## Domestic Conferences.....

- [27] Tae Choong Chung and **Tuyen P. Le**. Pleasure of Learning. *ICCC International Digital Design Invitation Exhibition*, :131–131, 2017.
- [28] TaeChoong Chung and **Tuyen P. Le**. RLVisualizer: An application for Visualizing Trajectories of Reinforcement Learning Problem. volume , pages 13–14. The Korea Contents Society, 2017.
- [29] CholJin Jong, Seung yoon Choi, JinSeok Kim, Md. Abu Layek, **Tuyen P. Le**, Marlith Jaramillo, and TaeChoong Chung. Study of Sound Location Tracking Mobile Robot Using Lego Mindstorms. volume , pages 1028–1029. KOREA INFORMATION SCIENCE SOCIETY, 2016.
- [30] JinSeok Kim, Seung yoon Choi, CholJin Jong, Md. Abu Layek, **Tuyen P. Le**, Marlith Jaramillo, and TaeChoong Chung. Selected wireless mesh network model and architecture for a communication interruption in the fixed wireless environment. volume , pages 1265–1267. KOREA INFORMATION SCIENCE SOCIETY, 2016.
- [31] Md Abu Layek, Ngo Quang Thai, Md Alamgir Hossain, Ngo Thien Thu, **Tuyen P. Le**, Ashis Talukder, TaeChoong Chung, and Eui-Nam Huh. Analysis of the Effects of Timing Presets on the

- Performance of H.264/AVC and H.265/HEVC Video Encoders. volume , pages 442–443. Korea Institute Of Communication Sciences, 2017.
- [32] Md Abu Layek, Ngo Quang Thai, Md Alamgir Hossain, Ngo Thien Thu, **Tuyen P. Le**, Ashis Talukder, TaeChoong Chung, and Eui-Nam Huh. Performance Analysis of AV1 for Video Coding in Very Low Bit Rates. volume , pages 118–120. KOREA INFORMATION SCIENCE SOCIETY, 2017.
- [33] Md. Abu Layek, Seung yoon Choi, **Tuyen P. Le**, Marlith Jaramillo, JinSeok Kim, Jeong cheol jin, Eui-Nam Huh, and TaeChoong Chung. Compression Efficiency Of Text Images In Hangul And Other Languages. volume , pages 777–779. KOREA INFORMATION SCIENCE SOCIETY, 2016.
- [34] Minh N. H. Nguyen, **Tuyen P. Le**, Nguyen H. Tran, and Choong Seon Hong. Deep Reinforcement Learning based Smart Building Energy Management. volume , pages 871–873. KOREA INFORMATION SCIENCE SOCIETY, 2017.
- [35] Quang Dang Nguyen, Ngo Anh Vien, **Tuyen P. Le**, SeungYoon Choi, A. F. M. Shahab Uddin, and TaeChoong Chung. Optimization to Task Bundle Processing for Multi-Access Edge Computing Systems. *Korea Computer Science Conference*, :255–257, 2019.
- [36] **Tuyen P. Le**, Abu Layek, Seung yoon Choi, and TaeChoong Chung. Gathering Objects in Four-rooms Domain under Partially Observability. volume , pages 865–867. KOREA INFORMATION SCIENCE SOCIETY, 2017.
- [37] **Tuyen P. Le**, Md. Abu Layek, Marlith Jaramillo, CholJin Jong, Seung yoon Choi, JinSeok Kim, and TaeChoong Chung. A Non-parametric policy based Algorithm in Reproducing Kernel Hilbert Space. volume , pages 892–893. KOREA INFORMATION SCIENCE SOCIETY, 2016.
- [38] **Tuyen P. Le**, Md. Abu Layek, CholJin Jong, Seung yoon Choi, JinSeok Kim, and TaeChoong Chung. Reinforcement Learning of Vehicle Agent and Art work Trial using the Learning Trajectories. volume , pages 719–721. KOREA INFORMATION SCIENCE SOCIETY, 2017.
- [39] Seung yoon Choi, Md. Abu Layek, **Tuyen P. Le**, Cheoljin Jeong, Jinseok Kim, Marlith Jaramillo, and TaeChoong Chung. A Study of Sequential Workspace Management Approach for Autonomous Mobile Robot in Path Planning Problem. volume , pages 1036–1038. KOREA INFORMATION SCIENCE SOCIETY, 2016.