

# TSUNG-YUAN TSENG

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## Education

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### RWTH Aachen University

*Master of Science in Robotic Systems Engineering, Dean's List, Best of Class, Grade: 1,4*

Oct. 2020 - Sept. 2023

Aachen, Germany

### Eidgenössische Technische Hochschule Zürich (ETH Zürich)

*Robotics Summer School, with only an acceptance rate of 8.8%, fully funded with top 3%*

July 2021

Zürich, Switzerland

### National Tsing Hua University (NTHU)

*Bachelor of Science in Power Mechanical Engineering, Grade: top 10%*

Sept. 2014 - June 2018

Hsinchu, Taiwan

## Publication

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**Tsung Yuan Tseng**, Alexander von Rohr, Lukas Brunke, Siqi Zhou, and Angela P. Schoellig, Reducing maximization bias and risk in hyperparameter optimization for reinforcement learning and learning-based control, Manuscript. Edwinn Gamborino, Alberto Herrera Ruiz, Jing-Fen Wang, **Tsung Yuan Tseng**, Su-Ling Yeh, and Li-Chen Fu, Towards effective robot-assisted photo reminiscence: Personalizing interactions through visual understanding and inferring, HCI International (2021).

## Patent

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**Tsung Yuan Tseng**, Method for controlling working endpoint of multi-axis object in two-dimensional display interface (2022), tW202201212A.

## Experience

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### Technical University of Munich, Learning Systems and Robotics Lab

*Master Thesis, Advisor: Prof. Angela P. Schoellig*

Mar. 2023 - Oct. 2023

Munich, Germany

- Hyperparameter optimization with risk measures for learning-based control and reinforcement learning algorithms.
- Proposed an adaptive sampling algorithm that leads to improved consistency in performance and reduced computation effort by 25% to 66% across selected control algorithms.

### AUDI AG

*Research Intern, Advisor: Dr. Vahid Hashemi*

Sept. 2022 - Feb. 2023

Ingolstadt, Germany

- Safety verification on 2D object detection systems (PolyYolo) by extending and implementing the VeriNet tool.

### DSME-RWTH Aachen University

*Project Student, Advisor: Prof. Sebastian Trimpe*

Oct. 2021 - Aug. 2022

Aachen, Germany

- Researched on learning safe value functions with soft actor critic algorithm in the domain of safe reinforcement learning.
- Developed a practical algorithm which could learn a transferable safety knowledge to help learn an arbitrary task efficiently and more safely while preserving high performance.

*Student Research Assistant & Teaching Assistant, Advisor: Prof. Sebastian Trimpe*

Aachen, Germany

- Researched on active learning dynamics using Gaussian process/sparse Gaussian process in GpyTorch and CasADi.
- Implemented a truss solver that provides a systematic way of solving 2D truss structures for the course "Computer Science in Mechanical Engineering 1".

### Chieftek Precision Co. (CPC), Ltd.

*Robotics Software Engineer*

Sept. 2019 - June 2020

Tainan, Taiwan

- Developed a simulator of robotic systems that can help detect collisions and visualize motions in C# using OpenGL and Bullet Physics.

### LEISO Co., Ltd.

*R&D Intern & Engineer*

Mar. 2018 - Jan. 2019

Hsinchu, Taiwan

- Developed the software that schedules an optimal measuring procedure of a robotic manipulator with 15x efficiency gain.

## Honors

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**Dean's List:** Top 5% students in the 2020/2021 academic year. RWTH Aachen

**Best of Class Award:** Awarded \$2250 Euro of scholarship two times, top 2%. RWTH Aachen

**ETH Robotics Summer School Stipendium:** Awarded \$400 CHF financial support, top 3%. ETH Zürich

**CPC Patent Bonus:** Awarded \$3608 USD after inventing and filing a patent as first author. CPC

**Undergraduate Research Competition:** Won the first place out of 40 teams and prize money \$1283 USD. NTHU

**Academic Achievement Awards of National Tsing Hua University:** Ranked among top five percent. NTHU

**Great Academic Scholarship:** Hua-Yen scholarship \$323 USD, Peng Wenmin scholarship \$323 USD. NTHU