Personal website

Linkedin

# Thang Duong

thangduong@arizona.edu 520-553-8926 Tucson, AZ 85705

## RESEARCH INTERESTS

Bandits, Reinforcement learning, Meta-learning, Representation learning, and Transfer learning.

## EDUCATION

**The University of Arizona - Computer Science Department** **Tucson, Arizona**
*PhD Student* *Aug 2022 - Now*

- **Sequential Multitask Representation Transfer in Bandit**, supervised by Prof. Chicheng Zhang. I'm the project's lead researcher that responsible for most of idea proposals, and lemma and theorem's proof.

**Hanoi University of Science and Technology** **Hanoi, Vietnam**
*B.S.E in Mechatronics Engineering, Advanced Program*
GPA: 3.07/4.00 (Top 5% of the program)

**VinAI Research** **Hanoi, Vietnam**
*AI Research Resident* *July 2019 - June 2022*

- **Meta-Reinforcement Learning** and **Bandits**, supervised by Dr. Yasin Abbasi-Yadkori and Dr. Tung Pham. I'm responsible for literature review and performing experiment. I also organize the Reinforcement Learning reading group.
- **Active Learning** and **Domain Adaptation**, supervised by Dr. Toan Tran, Dr. Trung Le, and Prof. Dinh Phung. I proposed some research directions based on the different types of Active Learning assumptions and use Domain Adaptation to warm-start training.
- **Sim-to-Real Data Augmentation**, supervised by Dr. Rang Nguyen. I proposed a Domain Adaptation method to close the Sim-to-Real gap and tested it on the CARLA simulation.

## PUBLICATIONS

**Beyond task diversity: Provable representation transfer for sequential multi-task linear bandits**
***Thang Duong***, *Zhi Wang, Chicheng Zhang*
NeurIPS 2024: [Paper] [Github]

**Non-stationary Bandits and Meta-Learning with a Small Set of Optimal Arms**
*MJ Azizi,* ***T Duong****, Yasin Abbasi-Yadkori, András György, Claire Vernade, M. Ghavamzadeh*
RLC 2024 Conference: [Paper] [5 mins summary] [Github]

**Association Of Mri-defined Structure Features At Baseline With Knee Pain Trajectories**
*S. Liu, X. Sun, Y. Ge,* ***Thang Duong****, C.K. Kwoh*
ACR Convergence 2024: [Paper]

## OTHER RESEARCH EXPERIENCE

**Precision Mechanical and Optical Engineering Department - HUST** **Hanoi, Vietnam**
*Project lead* *Jan 2018 - June 2019*

- (PRESM 2019 conference) Deep Regression for precise geometric dimension measurement. I lead the project and mentor two juniors for this paper.
- (INISCOM 2018 conference and Thesis) Analyzing seismic signal using SVM for vehicle motion detection. I lead do most of the project.

**National Chung Cheng University** **Chiayi, Taiwan**
*Intern* *June 2016*

- Summer Internship: 3D scanner calibration. I measured how the shape of the circles and checker board calibration plate changes to inference the camera lens' parameters for the 3D reconstruction task.

**Sun Moon University** **Asan, South Korea**
*Intern* *July 2015*

- Summer Internship: ECG signal processing and Robot Control Programming

## WORK EXPERIENCE

**The University of Arizona - Computer Science Department** **Tucson, Arizona**
*Graduate Assistant* *August 2022 - Now*
- Teaching Assistant for CSC 445: Introduction to Algorithms and CSC 296: Introduction to Artificial Intelligence.
- Research Assistant.

**VinAI Research** **Hanoi, Vietnam**
*Junior Engineer* *July 2019 - Dec 2019*
- Developed the front-end for the 3D Face Reconstruction demo at NeurIPS 2019 (Android, OpenGL 2.0)

**NAL Vietnam JSC** **Hanoi, Vietnam**
*AI Team leader, Scrum master* *May 2018 - June 2019*
Managing a team of six members to deliver multiple products:
- Chatops: https://chatops.jp/en/
- Facial recognition, Vietnamese Text2Speech and Speech2Text
- Other Proof-of-Concept projects: OCR, Defect detection, Grammar correction, etc.

**FPT Software** **Hanoi, Vietnam**
*Technical leader* *Apr 2017 - Sep 2017*
Lead a team of three members to make multiple proof-of-concept projects
- R&D project: Application using OpenCV object detection and tracking on smart phone in a cross-platform app with Xamarin

**Hanoi University of Science and Technology** **Hanoi, Vietnam**
*Student* *July 2015 - June 2018*
- Embedded system projects & science fair: public lighting system using Solar energy (Arduino)

## Certificates

**TOEFL**
*Overall: 107 - Reading: 30, Listening: 30, Writing: 26, Speaking: 21* *Nov 2021*

**GRE**
*Quantitive: 169, Verbal: 156, Analytical Writing: 4.0* *Oct 2021*

**Erasmus full scholarship** **Valencia, Spain**
*Exchange program to Universitat Politècnica de València* *Sep 2016 - Jan 2017*

## PROJECTS

**Bandit Meta Learning**: Increasing the optimization's efficiency by exploiting the shared structure between multiple instances of an online-learning problem.

**Active Domain Adaptation**: Adapting from Source to Target Domain using Active Learning to warm-start and improve baseline algorithms.

**Sim-to-Real Data Augmentation**: a hierarchical model to generate adverse weather images from the CARLA simulation for different Autonomous Driving tasks. This helps disentangle the content and style more effectively than some baselines.

## REFERENCES


**Professor. Chicheng Zhang**
*University of Arizona*
chichengz@cs.arizona.edu

**Professor. Mai Nguyen Thi Phuong**
*Hanoi University of Science and Technology*
mai.nguyenthiphuong@hust.edu.vn

**Dr. Yasin Abbasi-Yadkori**
*Senior Research Scientist at Deepmind*
yadkori@google.com

**Dr. Tung Pham**
*VinAI Research Scientist*
v.tungph4@vinai.io