



Personal website

Linkedin



# Thang Duong

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

## RESEARCH INTERESTS

LLM Reasoning, In-context learning, Bandits, Reinforcement learning (RL), 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.
- **Bandit application in Wireless Communication**, supervised by Prof. Chicheng Zhang and Prof. Ming Li. I'm the project's lead researcher that responsible for most of idea proposals and algorithms' implementation.
- **RL planning with LLM Reasoning**, supervised by Prof. Chicheng Zhang. I'm the project's lead researcher that responsible for most of idea proposals and algorithms' implementation.
- **LLM Reasoning reading groups**, supervised by Prof. Mihai Surdeanu, Prof. Kwang-Sung Jun, and Prof. Chicheng Zhang. I'm presenting and discussing some papers on the latest advancements in LLM Reasoning in these four reading groups.

### 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. Kwok*

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***Intern***Chiayi, Taiwan***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***Intern***Asan, South Korea***July 2015*

- Summer Internship: ECG signal processing and Robot Control Programming

## WORK EXPERIENCE

---

**The University of Arizona - Computer Science Department***Graduate Assistant***Tucson, Arizona***August 2022 - Now*

- Teaching Assistant for CSC 445: Introduction to Algorithms and CSC 296: Introduction to Artificial Intelligence.
- Research Assistant.

**VinAI Research***Junior Engineer***Hanoi, Vietnam***July 2019 - Dec 2019*

- Developed the front-end for the 3D Face Reconstruction demo at NeurIPS 2019 (Android, OpenGL 2.0)

**NAL Vietnam JSC***AI Team leader, Scrum master***Hanoi, Vietnam***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***Technical leader***Hanoi, Vietnam***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

## PROJECTS

---

**AI club's board member:** Organizing workshops for undergrad students to learn about LLM's prompting techniques and applications.

**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](mailto:chichengz@cs.arizona.edu)**Professor. Mai Nguyen Thi Phuong***Hanoi University of Science and Technology*✉ [mai.nguyenthiphuong@hust.edu.vn](mailto:mai.nguyenthiphuong@hust.edu.vn)**Dr. Yasin Abbasi-Yadkori***Senior Research Scientist at Deepmind*✉ [yadkori@google.com](mailto:yadkori@google.com)**Dr. Tung Pham***VinAI Research Scientist*✉ [v.tungph4@vinai.io](mailto:v.tungph4@vinai.io)