

PERSONAL INFORMATION

Tuan-Anh Bui

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MOTIVATION

With strong experience on the industrial environment, I pursue the aims that bring a knowledge from academic research to the real life by a technological product, especially using AI, Computer Vision to improve daily, common activities, to make the world to be a better place. I realize that pursuing Ph.D. is the must-do path to deepen my knowledge and improve the research methodology for this goal

RESEARCH BACKGROUND

Generative Adversarial Network, Deep model Compression, Image Retrieval.
Digital Signal Processing, Audio Processing (Viettel).

WORK EXPERIENCE

2017 – Present **Researcher on Computer Vision**

Temasek Lab, Singapore University of Technology and Design (SUTD)

- (Present) Model compression, esp. in Recurrent Neural Network (RNN) and Long-Short Term Memory (LSTM), to reducing memory and computational cost, to apply on mobile hardware such as FPGA.
- (Present) Improving Generative Adversarial Networks (GANs), esp. in mode collapse problem.
- Implemented module to detect and track Undefined Flying Objects, esp. Drone in Sky Surveillance - Flying Object Detection (SSFOD) project.
- Improved image retrieval module to handle big dataset (appr. 200k images) in Urban-area Scene Based Localization (USBL) project.

2012 – 2017 **Digital Signal Processing Engineer**

Viettel R&D Institute, Viettel Groups

- Developed baseband processing algorithms: Channel equalization using adaptive filter, Adaptive Noise Cancellation, Digital Pre-Distortion to improve the linearity of radio amplifiers.

2010 - 2012 **Research Assistant on Networking**

Undergraduate Research, Green Networking Lab, HUST

- Researched on methods for reducing energy consumption in data centre network using Software Defined Network (SDN).

EDUCATION

2007 - 2012 **B.Sc. in Electronics and Telecommunications (Honour)**

Hanoi University of Science and Technology (HUST)

- Thesis title: "Research on optimal trade-off between power saving and QoS".
- Thesis grade: 4/4 (10/10) (Best Thesis Award).
- GPA: 8.44/10 (top 5%, Merit for Excellent Graduate Student)

2004 - 2007 High school Diploma, Physics Talented Class

Le Hong Phong Gifted High School

- Got a Second prize in National Physics Olympiad for High School Students.

PAPERS

- 2018 Ngoc-Trung Tran*, **Tuan-Anh Bui***, Ngai-Man Cheung.
Improving GAN with Neighbors Embedding and Gradient Matching.
Under submission to The Thirty-Third AAAI Conference on Artificial Intelligence (AAAI-19).
- 2018 Ngoc-Trung Tran, **Tuan-Anh Bui**, Ngai-Man Cheung.
Dist-GAN: Improving GAN using distance constraints.
Accepted to European Conference on Computer Vision 2018 (ECCV).
- 2018 Ngoc-Trung Tran, Dang-Khoa Le Tan, Anh-Dzung Doan, Thanh-Toan Do, **Tuan-Anh Bui**, Ngai-Man Cheung.
On-device Scalable Image-based Localization.
Accepted to Transaction on Image Processing 2018 (TIP)

Proposal **Tuan-Anh Bui.**

Improving WGAN using Discriminator Continuity.
Disentangled Image Compression by the (Similarity) Force.
Nonlinear Adaptive DNN model compression.
SceneNet: A generative model for generating scene from 6-DOF camera pose.
Auto-generate Football Minimap from live match using Domain Transfer.

HONOURS & AWARDS

- 2012-2015 Creative Idea Award for Research and Management at Viettel R&D Institute.
- 2012 Merit for excellent graduate student, HUST.
- 2012 Best Thesis Award in Thesis Defence, SET, HUST.
- 2012 Third prize in Student Conference on Scientific Research.
- 2007 Second prize in National Physics Olympiad for High School Students.

REFERENCES

Assistant Professor Ngai-Man Cheung, Ph.D. (Supervisor)

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Singapore University of Technology and Design
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Associate Professor Thu-Huong Truong, Ph.D. (Ex-Supervisor)

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