PERSONAL INFORMATION

Tuan-Anh Bui

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RESEARCH BACKGROUND

Generative Adversarial Network, Deep model Compression, Image Retrieval.

Digital Signal Processing, Audio Processing (Viettel).

WORK EXPERIENCE

2017 – Present — Reseacher Assistant on Computer Vision

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

— (Present) Deep 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.

TECHNICAL SKILLS

Programming
- Tensorflow, Keras.
- Matlab, Python, C.

Algorithms and Math
- Machine learning algorithms, Deep learning models.
- Probability, Statistic, Algebra.

Others
- Logical thinking, problem solving mindset.

PAPERS

2018 Ngoc-Trung Tran*, **Tuan-Anh Bui***, Ngai-Man Cheung.
Improving GAN with Neighbors Embedding and Gradient Matching.
Accepted to The Thirty-Third AAAI Conference on Artificial Intelligence (AAAI-19), rank A*, acceptance rate 16.2%.
Application: Capable of learning an arbitrary complex system or distribution, generating dataset and many AI applications.

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), rank A, acceptance rate 25%.
Application: Capable of learning an arbitrary complex system or distribution, generating dataset and many AI applications.

2018 Ngoc-Trung Tran, Dang-Khoa Le Tan, Anh-Dzung Doan, Thanh-Toan Do, **Tuan-Anh Bui**, Mengxuan Tan, Ngai-Man Cheung.
On-device Scalable Image-based Localization via Prioritized Cascade Search and Fast One-Many RANSAC.
Accepted to Transaction on Image Processing 2018 (TIP).
Application: Localization using urban scenes on mobile, Image Search, Object Recognition.

Proposal **Tuan-Anh Bui**.
Improving GAN by Discrimination Inspector.
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

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

Department of Information Systems Technology and Design

Singapore University of Technology and Design

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Associate Professor Thu-Huong Truong, Ph.D. (Ex-Supervisor)

School of Electronics and Telecommunications

Hanoi University of Science and Technology

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Dr. Ngoc-Trung Tran (Colleague)

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