

# Rang Nguyen

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## EDUCATION

### National University of Singapore

*Ph.D in Computer Science*

Singapore

2012 – 2016

- GPA: 4.71 / 5.0
- Thesis: Color Mapping for Camera-based Color Calibration and Color Transfer  
Description: The aim of the thesis is to understand mapping functions of calibrating different camera models in order to produce output images in the same color space.
- Recipient of the NUS Graduate Research Scholarship

### Ho Chi Minh City University of Technology

*B.Eng in Computer Science*

HCMC, Vietnam

2005 – 2010

- GPA: 8.42 / 10.0; graduated with honours (top 10 students in the batch)
  - Thesis: Analyzing Time Series Data based on Importance Points
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## EXPERIENCE

### VinAI

*Applied Research Scientist*

HCMC, Vietnam

2020 – present

- Leading a group of six members which involves in both research and applied projects.
- Research Projects:
  - Few-shot Image Classification: learning a deep learning model for classification task using a few labelled samples (published in NeurIPS 2021).
  - GAN-inversion: finding a latent space for editing real images (published in CVPR 2022).
  - Low-light image enhancement: enhancing the image quality in the low light conditions (under review in ECCV 2022).
- Applied Projects:
  - Surround View System (SVM): a vehicle camera system that provides several views such as top view, rear view, and panorama view to assist the driver when parking, either manually or automatically. Our team implemented three main modules in our in-house SVM system including: blending, photometric alignment and image enhancement. This system has been deployed in the newest electronic VinFast car model (VF e34).
  - Driver Monitoring System (DMS): a vehicle safety system that evaluates the driver's attentiveness, warns the driver if necessary, and eventually applies the brakes. Our team implemented Point-of-Gaze module to track the eye movement. This project was demonstrated at VinAI's booth in CES 2022.

### HCMC University of Technology

*Lecturer*

HCMC, Vietnam

2018 – 2020

- Teaching courses: Machine learning, Introduction to Artificial Intelligent, Image Processing and Computer Vision, Data Structure & Algorithm
- Research topics: Low-level Image Processing, Object Detection and Recognition, Image/Video Analysis and Understanding, Medical Imaging Analysis
- Projects:

- Traffic Surveillance System (advisor): detecting, recognizing and counting objects such as pedestrians, motorbikes, cars, buses, trucks and other vehicles from traffic videos.
- Security System (principle investigator): detecting and recognizing faces and the emotion (sentiment) from faces.

#### **J.K. Advisory LLC**

*Data Scientist Architect*

**HCMC, Vietnam**

2018 – 2019

- Developed a prototype model to identify objects for a global eCommerce client.
- Developed a logo detection tool for a branded client.

#### **National University of Singapore**

*Research Fellow*

**Singapore**

2016 – 2018

- Worked on AutoVision project under the supervision of Prof. Gim Hee Lee
- Worked on Multi-image Recoloring project under the supervision of Prof. Michael S. Brown

#### **National University of Singapore**

*Research Assistant*

**Singapore**

2012 – 2015

- Worked on Hyperspectral Imaging project under the supervision of Prof. Michael S. Brown

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## **SKILLS & ACTIVITIES**

- Expertise in image processing and computer vision, artificial intelligence, machine learning, deep learning.
- Reviewer for journals and conferences: CVPR2019/20/21/22, ICCV2017/21, ECCV2022, AAAI2022, WACV2019/20/21/22, TIP, CGF, THMS.

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## **PATENTS**

- Nguyen, R. M. H and Brown, M. S.: EmbeddedRAW: RAW Image Reconstruction Using A Self-Contained sRGB-JPEG Image With Only 64 KB Overhead, Singapore Patent Application 10201603008X, filed April 2016

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## **PUBLICATIONS**

- Dinh, T.M., Tran, A.T., Nguyen, R. and Hua, B.S.. HyperInverter: Improving StyleGAN Inversion via Hypernetwork. CVPR (2022).
- Le, D., Nguyen, K.D., Nguyen, K., Tran, Q.H., Nguyen, R. and Hua, B.S.. POODLE: Improving Few-shot Learning via Penalizing Out-of-Distribution Samples. NeurIPS (2021)
- Karaimer, Hakki Can, and Rang Nguyen. "A Correspondence-Free Color Chart Design for Color Calibration." LIM (2020)
- Heng, L., Choi, B., Cui, Z., Geppert, M., Hu, S., Kuan, B., Liu, P., Nguyen, R., Yeo, Y.C., Geiger, A., et al.: Project autovision: Localization and 3d scene perception for an autonomous vehicle with a multi-camera system. ICRA (2019)

- Hu, S., Feng, M., Nguyen, R.M., Hee Lee, G.: CVM-Net: Cross-view matching network for image-based ground-to-aerial geo-localization. In: Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition. (2018) 7258-7267
- Nguyen, R.M.H., Brown, M.S.: Raw image reconstruction using a self-contained srgb-jpeg image with small memory overhead. International Journal of Computer Vision (IJCV) (2017)
- Nguyen, R.M.H., Price, B., Cohen, S., Brown, M.S.: Group-theme recoloring for multi-image color consistency. Computer Graphics Forum (Proc. of Pacific Graphics) (2017)
- Nguyen, R.M.H., Brown, M.S.: Why you should forget luminance conversion and do something better. In: Computer Vision and Pattern Recognition (CVPR). (2017)
- Nguyen, R.M.H., Brown, M.S.: Raw image reconstruction using a self-contained srgb-jpeg image with only 64 kb overhead. In: Computer Vision and Pattern Recognition (CVPR). (2016)
- Nguyen, R.M.H., Brown, M.S.: Fast and effective L0 gradient minimization by region fusion. In: International Conference on Computer Vision (ICCV). (2015) 208–216
- Nguyen, R.M.H., Prasad, D.K., Brown, M.S.: Raw-to-raw: Mapping between image sensor color responses. In: Computer Vision and Pattern Recognition (CVPR), IEEE (2014) 3398–3405
- Nguyen, R.M.H., Prasad, D.K., Brown, M.S.: Training-based spectral reconstruction from a single RGB image. In: European Conference on Computer Vision (ECCV). Springer (2014) 186–201
- Nguyen, R.M.H., Kim, S.J., Brown, M.S.: Illuminant aware gamut-based color transfer. Computer Graphics Forum (Proc. of Pacific Graphics) 33(7) (2014) 319–328
- Prasad, D.K., Nguyen, R.M.H., Brown, M.S.: Quick approximation of camera's spectral response from casual lighting. In: International Conference on Computer Vision Workshops (ICCVW), IEEE (2013) 844–851