Quan Nguyen

Curriculum Vitae

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https://github.com/ngmq/

Education

2015–2017 **University of Hamburg**, *Current GPA: 1.19*, Master candidate, *Intelligent Adaptive Systems*. Thesis: Object proposal generation applying distance dependent Dirichlet processes for superpixels clustering with learning features.

2009–2014 **FPT University**, *Degree type: Very Good*, Bachelors of Engineering, *Software Engineering*. Thesis: Indoor Robot Localization.

Honors and Awards

2017 **Second prize**, *Instagram Machine Learning Competition*.

2013 **Bronze prize**, *Vietnam ACM ICPC National Algorithm Programming Competition*.

2013 **First prize**, *FPT University ACM ICPC Programming Competition*.

2009 – 2014 **Full scholarships for Undergraduate study in Software Engineering, FPT University**.

2009 **Odon Vallet scholarship for exceptional Vietnamese high school students**.

2009 **Third prize**, *Vietnam High School National Physics Contest*.

2009 **Second Prize**, *Annual Contest of Mathematics and Youth magazine*.

Conference papers

[1] Nikhil Churamani, Paul Anton, Marc Bruegger, Erik Fliesswasser, Thomas Hummel, Julius Mayer, Waleed Mustafa, Hwei Geok Ng, Thi Linh Chi Nguyen, **Quan Nguyen**, Marcus Soll, Sebastian Springenberg, Sascha Griffiths, Stefan Heinrich, Nicolas Navarro-Guerrero, Erik Strahl, Johannes Twiefel, Cornelius Weber, Stefan Wermter. (2017). *The Impact of Personalisation on Human-Robot Interaction in Learning Scenarios*. Proceedings of the Fifth International Conference on Human Agent Interaction, pages 171–180, doi:10.1145/3125739.3125756.

[2] Hwei Geok Ng, Paul Anton, Marc Bruegger, Nikhil Churamani, Erik Fliesswasser, Thomas Hummel, Julius Mayer, Waleed Mustafa, Thi Linh Chi Nguyen, **Quan Nguyen**, Marcus Soll, Sebastian Springenberg, Sascha Griffiths, Stefan Heinrich, Nicolas Navarro-Guerrero, Erik Strahl, Johannes Twiefel, Cornelius Weber, Stefan Wermter. (2017). *Hey Robot, Why Don't You Talk To Me?*. Proceedings of the IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN), pages 728–731.

Technical Reports

[1] Quan Nguyen. (2016). *Simplified spiking neural network model applied to handwritten digit recognition*. Neural Networks Seminar, University of Hamburg.

[2] Quan Nguyen. (2016). *Recurrent Neural Networks for Sequential Image Processing*. Bio-inspired Artificial Intelligence Seminar, University of Hamburg.

[3] Quan Nguyen. (2015). *Low variance sampling for Particle Filter*. Intelligent Robotics Seminar, University of Hamburg.

[4] Quan Nguyen (2015). *Information Retrieval and Ranking in InfoSearch*. Knowledge Processing Seminar, University of Hamburg.

Skills & Abilities

AI methods	Machine Learning, Computer Vision, Natural Language Processing, Nonparametric Statistics, Bayesian Statistics
Programming Languages	C/C++, Python, R, MATLAB
Frameworks	OpenCV, Numpy, Caffe, Tensorflow, Keras, ROS

Machine Learning Projects

September 2017 – Now
Object proposal generation applying distance dependent Dirichlet processes for superpixels clustering with learning features, Master thesis.
Developing a probabilistic framework object proposals generation with focus on addressing two of the most frequent criticisms in object detection systems: 1) superpixels-based approaches are highly susceptible to even small pertubations in illumination or rotations (Hosang et. al, 2015) and 2) Object-Proposal Evaluation Protocol is 'Gameable' (Chavali et. al, 2016)

July 2017 – September 2017
Excitation Back-propagation for saliency detection systems on PASCAL-S dataset, Cognitive Computer Vision Lab.
Analyzed the suitability of the PASCAL-S dataset for saliency detection task. This work resulted in a technical report that contains a comprehensive list of images and their ground truths that are more suitable for object dection rather than saliency detection, effectively indicating a certain amount of flawness in this popular dataset.

April 2017 – May 2017
Gender recognition using deep learning on Fei Dataset, Cognitive Computer Vision Course.
Built and trained a convolutional neural network (CNN) capable of recognizing gender in Fei dataset. This model achieved a state of the art performance of 97% accuracy. The model and analyses were done in Python using Keras with Tensorflow backend. Code and analysis are available at https://github.com/ngmq/AI/tree/master/Fei%20FaceDatabase

March 2017 – May 2017
Bottom-up Saliency detection with VOCUS2 system, Cognitive Computer Vision Course.
Built a bottom-up saliency system that is able to construct saliency map from Intensity, Orientations, Lab color channels contrast features. Framework: OpenCV with C++. Code available at https://github.com/ngmq/SaliencyDetection

October 2016 – March 2017
Interactive Neural-Inspired Companion Robot, Master Project.
Built and trained several deep learning models for Noun Phrase chunking, Named Entity Recognition and Speech recognition in Natural Language Understanding model for a robotic system. The model successfully learned end-to-end tasks with minimal preprocessing and was later used in a study on social impact of interactive robots. Framework: Natural language processing toolkit NLTK, Tensorflow. Video accepted to 26th IEEE International Symposium on Robot and Human Interactive Communication RO-MAN 2017. Paper accepted to 40th German Conference on Artificial Intelligence KI 2017.

October 2015 – January 2016
Low variance sampling for Particle Filter, Intelligent Robotics Seminar.
Researched and implemented the effect of difference sampling techniques on performance of Particle Filter. Technical report available at https://www.researchgate.net

December 2013 – May 2014
Indoor Robot Localization, Bachelor thesis.
Implemented an indoor localization mechanism for robots based on their received wireless signals. Techniques and Framework: Kalman Filter and Particle Filter using Java

Work Experience

July 2017 – Now
Research Assistant, Cognitive Computer Vision Group, University of Hamburg.

May 2015 – September 2014
Embedded Software Developer, FPT Software.
Developed and maintained functionalities in franking machines for Neopost customers.

Languages

English **Fluent**

Vietnamese **Native Speaker**

References

[1] **Prof. Simone Frintrop**, Department of Informatics, University of Hamburg.
Email: frintrop@informatik.uni-hamburg.de

[2] **Dr. Mikko Lauri**, Department of Informatics, University of Hamburg.
Email: lauri@informatik.uni-hamburg.de

[3] **Dr. Sven Magg** (Lecturer), Department of Informatics, University of Hamburg.
Email: magg@informatik.uni-hamburg.de

[4] **Prof. Victor Uc-Cetina**, Computational Learning and Imaging Research, Universidad Autonoma de Yucatan.
Email: uccetina@uady.mx