# Quan Nguyen

*Curriculum Vitae*

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## Education

2015–Present **University of Hamburg**, M.Sc. in Artificial Intelligence, Current GPA: 1.19 (A+).
Thesis: Object proposal generation applying distance dependent Dirichlet processes for superpixels clustering with learning features

2009–2014 **FPT University**, B.E. in Software Engineering, GPA: 8.0/10 (A).
Thesis: Indoor Robot Localization

## Relevant Skills

AI methods Machine learning, Computer Vision, Natural Language Processing, Non-parametric and Bayesian statistics

Frameworks OpenCV, Numpy, Caffe, Tensorflow, Keras, ROS, C/C++, Python, R, Matlab

## 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] N. Churamani, P. Anton, M. Bruegger, E. Fliesswasser, T. Hummel, J. Mayer, W. Mustafa, H. G. Ng, T. Nguyen, **Q. Nguyen**, M. Soll, S. Springenberg, S. Griffiths, S. Heinrich, N. Navarro-Guerrero, E. Strahl, J. Twiefel, C. Weber, S. 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] H. G. Ng, P. Anton, M.Bruegger, N. Churamani, E. Fliesswasser, T. Hummel, J. Mayer, W. Mustafa, T. Nguyen, **Q. Nguyen**, M. Soll, S. Springenberg, S. Griffiths, S. Heinrich, N. Navarro-Guerrero, E. Strahl, J. Twiefel, C. Weber, S. 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.

## Machine Learning and Computer Vision Projects

Sep 2017 – Present **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 2) Object-Proposal Evaluation Protocol is 'Gameable'

Jul 2017 – Sep 2017 **Excitation Back-propagation for saliency detection systems**, 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

Apr 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

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Mar 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

Oct 2016 – Mar 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

Dec 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

Jul 2017 – Present **Research Assistant**, Cognitive Computer Vision Group, University of Hamburg.
Working on numerous computer vision and deep learning research projects. Framework: C++, Caffe with Python and C++ wrapper.

Sep 2014 – May 2015 **Embedded Software Developer**, FPT Software Inc.
Developed and maintained functionalities in franking machines for Neopost customers. Framework: C++, Windows CE

May 2014 – Sep 2014 **Game Developer**, Gameloft HAN Inc.
Developed and designed features of Android games. Framework: C++, Java, OpenGL, Android

Nov 2011 – Aug 2012 **Software Developer**, FPT Software Inc.
Developed and designed large scale insurance management system for AON Benfield. Framework: Visual Basic .NET, Javascript, Ext.Net, MS SQL Server

## Referees

1) **Prof. Dr. 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**, Department of Informatics, University of Hamburg.
**Email**: magg@informatik.uni-hamburg.de