Anthony Tri Phap Nguyen

based in: San Francisco – Stockholm – Frankfurt

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Highlights

- Broad knowledge of programming languages and operating systems with
2 years of intensive work in Python, 5+ years in MATLAB, C/C++ and 4 years in Linux
- Machine Learning Engineer (prospective) with high interest to participate in a
wide range of subjects. Worked on different projects using TensorFlow, PDNN and HTK.
- Extensive linguistic proficiency and great desire to learn more
- Worked in a family business since childhood
(technical administration, PR, inventory management)

Experience

Digital Signal Processing Engineering Intern   **Aug 2015 - Feb 2016**
Singapore, Ngee Ann Polytechnic

Implemented a Recursive least squares filter on a real-time digital signal processor
which adaptively reduces noise in audio signals. On-board implementation in C,
filter simulation in MATLAB

Digital Signal Processing Engineer   **Apr 2016 - Aug 2016**
Germany, Darmstadt University of Applied Sciences

Implemented a voice pitch analyser that measures and returns the pitch and range
of a speaker using a Raspberry Pi. Implementation in C.

Lab Assistant   **Mar 2015 - June 2015**
Germany, Darmstadt UAS

Programmed the FPGA of a Zedboard to control onboard LEDs & buttons
and simulate traffic lights. Implemented in VHDL and Simulink.

Teaching Assistant   **Apr 2014 - Feb 2015**
Germany, Darmstadt UAS

Held various weekly seminars for courses in: simulation of technical systems using
MATLAB, microprocessor technology, measurement technology, signal processing,
design of digital systems

Technical Skills

Programming Languages: Python, C, C++, MATLAB, JAVA, VHDL, SQL, ASM Language

Others: Tensorflow, PDNN, HTK, Git, Linux, Unix, OSX, Windows, LaTeX, Slack

Personal Projects

Patient Clustering: Collaborative work with medical PhD student for subgrouping
patients with multiple chronic conditions using pattern recognition to predict patient journeys.
Used Hidden Markov Models with an Expectation-Maximization algorithm.

Speech Analyser: Implemented in MATLAB. Using short-time Fourier transform,
autocorrelation, ZCR and energy-based learning to distinguish between
utterances & breaks, voiced & voiceless consonants, gender & approx. age of speaker.

Surveillance System: Homemade multi-camera system using Raspberry Pis. Features include network support for web streaming and remote control via SSH/VNC.

Voice Controlled Home Automation: Bash shell scripting, Python. Build a digital assistant on a single-board computer to voice control computers, home devices, lights and execute shell scripts. Triggered by a Bluetooth remote for privacy protection.

Related Coursework

Traffic Sign Recognition: Object detection system on a traffic sign data set using TensorFlow to build a ConvNet and visualize the results.

Deep Neural Networks: Used multilayer ConvNets with BackProp, ReLU and max pooling to classify images in CIFAR-10 dataset. Written in MATLAB.

Deep Learning in ASR: Used HTK to train Hidden Markov Models and Gaussian Mixture Models and DNN models to estimate posteriors from filter banks & MFCCs

AI in Gaming: Used heuristic functions, alpha-beta pruning and HMMs to create an AI bot able to play games such as 3D Tic-Tac-Toe, Checkers and Duck Hunt. Written in C++.

Itinerary Planner: Used PDDL to automatically construct an travel plan given the customers interests in an area featuring public transport systems and tourist attractions.

Data Collection in Speech Technology: Generated new speech samples based on Spontal dataset using Shadowing and other respeaking methods. Methods evaluated on Amazon Mechanical Turk.

Simple Image Classifier: Implemented AdaBoost, Bayes Classifier, Support Vector Machines to classify images and decipher hand writing.

Basic Image Analyser: Implemented Hough Transform, K-means clustering, graph cuts for image feature detection and segmentation.

Artificial Neural Networks: Implemented simple ANNs of types Back-prop, Hopfield, RBF and SOM for optimization, classification, diagnosis.

Education

Master of Science in Machine Learning   **Aug 2016 - June 2018 (exp.)**
KTH Royal Institute of Technology, Stockholm, Sweden

Bachelor of Engineering in Electrical Engineering   **Sep 2012 - Mar 2016**
Darmstadt UAS, Darmstadt, Germany
Concentration: Telecommunications Engineering

Interests & Others

Languages: German (mother tongue), Vietnamese (mother tongue), English (excellent), Russian (basic), Swedish (basic)

Music: Songwriter, singer and band leader. Joined a guitar club at Ngee Ann Polytechnic that donates its concert incomes to underprivileged prospective students

Assistant Manager: worked in a family business (supermarket) from childhood on. Tasks include technical administration, inventory management and PR.

Community Service: Supervisor at a diaconia in Nieder-Ramstadt. Department: Electrical Assembly

Scholarship: 18 month scholarship from Anna Ruths-Stiftung for master studies at KTH.