VITHURSAN THANGARASA

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https://embedding.ai/ github.com/vithursant linkedin.com/in/vithursant

EDUCATION

MASc, Machine Learning & Artificial Intelligence

Machine Learning Research Group (MLRG), University of Guelph

May 2017 – Present Guelph, Ontario

- Research focuses on developing lifelong learning, meta-learning and curriculum learning algorithms for DNN models to autonomously learn online over continuous streams of non-stationary data
- Supervised by Dr. Graham W. Taylor

BEng, Engineering Systems & Computing (Honours, Co-op)

University of Guelph

Sept 2012 – Apr 2017 Guelph, Ontario

EXPERIENCE

Machine Learning Engineer (Computer Vision)

Tesla, Inc.

May 2017 – Present Fremont, California

- Working with the Advanced Technology Group (ATG) on confidential future products and computer vision systems for Tesla's vehicles

Machine Learning Engineer

Scotiabank - Artificial Intelligence & Machine Learning Group

Sept 2016 – Dec 2016 Toronto, Ontario

- Proposed and worked on an AI-Powered Financial Chatbot to provide significant business value for Scotiabank's Customer 360°Intelligence
- Implemented a generative dialogue model using novel Deep Learning techniques for Natural Language Understanding and Generation
- Trained generative models on Amazon EC2 P2 instances using dialogue datasets, DevOps tools and Distributed TensorFlow

Hardware and Systems Developer

ON Semiconductor - Medical & Wireless Products Division

May 2016 – Aug 2016 Waterloo, Ontario

- Implemented a power supply and clock calibration firmware library for RSL10, an ultra-low-power multi-protocol BLE 5.0 SoC
- Performed hardware and firmware verification on the BLE 5.0 Security Stack: GAP/GATT pairing and bonding process for RSL10

Software Engineer (Video Compression)

Evertz Microsystems Ltd. - Canadian Headquarters

Jan 2015 – Aug 2015 Burlington, Ontario

- Independently researched and implemented a Capped Variable Bit-rate algorithm for Real-Time H.264 video encoders/transcoders

Mobile Application Developer (Android)

Jamdeo Ltd. (Flextronics & HiSense Joint Venture)

May 2014 – Aug 2014 Oakville, Ontario

- Developed security libraries for secure D2D communication in the core of an Internet of Things (IoT)-based Android application

SOFTWARE EXPERTISE

Languages: Python C MATLAB

Deep Learning: PyTorch TensorFlow

Deep Learning Models: CNN RNN LSTM GAN VAE Seq2Seq

Software Tools: Scientific Python Stack NLTK Visual Studio Code Atom

DevOps Tools: AWS Terraform CloudFormation Docker Jira Git

HARDWARE EXPERTISE

Languages: VHDL Verilog

Design Tools: Xilinx ISE Vivado HLS GNU ARM Eclipse

Hardware: Embedded Systems Xilinx Zynq-7000 ARM Cortex-M

PROJECTS

Magnet Loss for Metric Learning
PyTorch implementation of the Magnet Loss paper from Facebook AI Research

VAE with Gumbel-Softmax
TensorFlow implementation of the Concrete Distribution paper from Google DeepMind

Terraform + AWS
Built a tool to automate provisioning of AWS Spot Instances for Deep Learning workloads using Terraform

ACHIEVEMENTS

Deep Learning & Reinforcement Learning Summer School

University of Montréal

June 2017 – July 2017

- Accepted with Canadian Institute for Advanced Research (CIFAR) scholarship
- 1 of 225 admitted out of an applicant pool of 1,130 from around the world