Jason Bens

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Biography

I'm an electrical engineer interested in finding applications for deep learning in computer-science and engineering fields. I enjoy working with embedded systems and playing with microcontrollers. Eventually, I want to bridge the gap between humans, machines, and AI, and find ways to combine them to make something greater than the sum of its parts. In my off-time, I follow my interests through online courses such as those offered by Coursera or edX.

Skill Summary

C	Ngspice	Schematic Capture	Machine Learning
Python	Altium	PCB Fabrication	Pattern Recognition
Matlab	NI LabView	Embedded Software Design	Deep Learning
LaTeX	GNURadio	Firmware Development	Neural Networks
Git	AutoCAD	Analog/Digital Design	Medical Image Processing

Experience

Research Intern

Advanced Telecommunications Research Institute International Kyoto, Japan
June 2013 - August 2013

Under the supervision of Dr. Yukiyasu Kamitani in the Department of Neuroinformatics, I performed research into machine learning, primarily focusing on the application of neural networks, especially deep learning architectures, to the decoding of object representations in the brain. Primarily, I worked on implementing a stacked denoising autoencoder in python using Theano to perform generic object recognition with the goal of using fMRI data to predict the neural response of a subject when presented with an image.

Research Intern

Advanced Telecommunications Research Institute International Kyoto, Japan
July 2012 - April 2013

Working under the supervision of Dr. Noriko Yamagishi and Dr. Matthew DeBrecht in the Department of Cognitive Neuroscience, we performed research into the mechanisms of visual attention, as well as neural plasticity. My primary duties were developing software using MATLAB to perform visual experiments, as well as pattern extraction using the resulting EEG, MEG, and fMRI data. Additional duties involved learning to use new software packages, and developing documentation and guides to perform routine data processing steps using these new packages.

Education

B.Eng in Electrical Engineering University of Victoria
2012 - August 2014

- Designed a portable USB battery pack as a capstone project.
- Took part in the UVic ECOSat team designing a small satellite for the Canadian Satellite Design Competition put on by Geocentrix.
- Part of the Microprocessor Group programming club.
- Implemented an unsupervised image segmentation algorithm by Deng and Clausi using Markov Random Fields.
- Designed a software-defined PSK31 transceiver using GNU Radio.

Diploma in Electronics Engineering Technology Southern Alberta Institute of Technology
2009 - 2011

- Designed a 20 MHz arbitrary signal generator as a capstone project.

Massive Open Online Courses

- Web Intelligence and Big Data
- The Brain and Space

Affiliations

- ASET (Past Member)

Extracurricular Activities

ATR Machine Learning Club

- Read journal articles about recent developments in the machine learning field.
- Present recent journal articles in front of colleagues at ATR (Advanced Telecommunications Research Institute International).

Language Acquisition

- Received private tutoring in Japanese for one year
- Self-directed study in Mandarin Chinese

Microprocessor Group

- Build Engenuics embedded microcontroller kit
- Develop hardware drivers for peripherals

ECOSat

- Develop initial design for satellite communication and tracking ground station