COMP30170 Final Year Project

ConvNets for iOS Gesture Recognition Applications

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Weekly Report 2, October 4, 2016

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1 Update

- Set up Xcode and built calculator from stanford module [1]. Very good and Lecturer explains very clearly. I've gone through Basic syntax and MVC so far. This was done in the first 3 videos.
- Finished Coursera videos. Went through variance and bias. Also went through problems that can arise and when certain solutions apply. Highlighted some issues to be aware of and avoid. - More data isn't always the right answer - Cross validation set allows for more valid testing - When to add more features/neurons to the network
- Set up Latex through Texmaker and Texlive
- Signed risk assessment form

2 Items for discussion

- Would like to set up app asap and then do further state of the art research as I am collecting data. For this reason I suggest devoting as much of this week as needed to get app up and running and recording some sample data
- Is it ok to record meetings electronically in Latex and provide it as supplement to my lab book? What is log-book folder/documentation folder for? Doesn't it have to be hard copy? Will I use bib for ongoing references vs weekly bib for stuff I find during the week? Should I use reference manager?
- Use a cross validation set? Implications on data set to be recorded?
- Experiment with GPU? Do I need CUDA for this?
- Discuss timetable? Maybe better to do this after I have a rough outline made?
- Any advice on where to work when I graduate?
- Is it possible to do a PHD in few years? What are the differences between doing one now and then?
- Funding for PHD?
- Working abroad vs. Ireland?

3 Plan for Next Week

In order of priority from top to bottom

- Get app up and running.
- Make a timetable for the year, more detailed one until christmas?
- Start into further deep learning resources e.g. [2–4].
- Investigate paramaterisation of bitmaps.

4 Meeting Notes

canadian paper using RNNS, show attend and tell, theano and tensorflow

We will probably use tensorflow

More details on LeNet in next meeting - paper overview first + code snippets training it and running it on the test data

iOS uses SQLite - seamless integation with cloud

serialisation class for JSON - one line of code - apple supported

stack buttons - another way to do grid layout

Look into force? Api exists or not? May only be exposed as a gesture? UItouch api - CGFloat Get from gesture recogniser Possibly get Iphone6s?

Go through udacity stuff + softmax

Encrypt hard drive?

Need to build latex twice to allow dependencies to be resolved

Do PHD now or never do one. Matter of getting funding in UCD - Research proposals - SFI Find out if funding is successful around May deadline for SFI - IRSECT - programme for supporting PHDS NYU Stanford Toronto Areas that overlap with signal processing What sub area in machine learning are you interested in? Genomics? Big data? Medical?

References

[1] P. Hegarty. (2016) Developing ios 8 apps with swift. [Online]. Available: https://itunes.apple.com/en/course/developing-ios-8-apps-swift/id961180099

[2] Ng. (2016) Stanford course on machine learning. [Online]. Available: https://www.coursera.org/learn/machine-learning

[3] V. Vanhoucke. (2016) Udacity course on machine learning. [Online]. Available: https://www.udacity.com/course/deep-learning--ud730

[4] NVIDIA. (2016) Course on deep learning. [Online]. Available: https://developer.nvidia.com/deep-learning-courses