ExcelNet

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Deep Learning

CNNs Rule Everything Around Me
Big Questions about Deep Learning

- How do we leverage deep learning?
- How do we deploy to users in the cloud?
- How do we achieve 6σ reliability?
- How do we help non-programmers?
- How do we enable power users?
- How do we maximize value?
- ...
CNNs are Hard!!!
The Solution

Excel is the #1 tool in business
It’s just like the human brain

Columns in Excel ⇔
Cortical Columns in Brain

Cells in Excel ⇔
Cells in Brain
Today

Unprecedented Synergy

Microsoft Excel

Convolutional Neural Networks
Convolutional Neural Networks

1. Set of non-linear functions with lots of parameters
2. CNN Prediction = function evaluation
3. Function vocabulary
   a. Inner product: $c^T x + b$
   b. Half-wave Rectification: max(x, 0)
   c. Max-pooling: max($x_{i:i+k,j:j+k}$)
   d. Softmax activation $\exp(-f_i) / \sum_i(\exp(-f_i))$
4. All we need are Excel formulas!
How does it work?

1. Leveraging MS Excel® Enterprise-level multimedia/vector arithmetic middleware service to do scientific computing
2. Write once, deploy anywhere (desktop, server, mobile)!

Max Pooling in Excel

It looks like you’re building a neural network. Would you like help?
- Yes
- No
From backprop to bespoke

1. No backprop - none needed
2. Weights are at your fingertips
3. For power users and beginners alike
4. Artisanal data science
Surf Into the Network

Absolutely no:

1. Visual Basic / VBScript
2. Excel Macros
3. ActiveX / OLE

Get it on the world wide web at:
http://www.deepexcel.net/
Over 21K Visitors Already!
Business Plan

1. MNIST: Free
2. Imagenet: $10 / Month
3. Semantic Segmentation: $20 / Month
4. ??????
5. Profit
Praise for ExcelNet

“Either a con or a crazy.” -- Hacker News

“One tool to rule them all.” -- Yangqing Jia

“Meh” -- Yan LeCun

“10/10” -- Reddit

“Why??!!” -- CMU Grad Student

“Don't you have, you know, research to do?” -- UW Grad Student

“These guys must be smoking pot...” -- David’s Advisor
Thank You!

http://www.deepexcel.net/