Google Brain Team blog URL – <https://ai.googleblog.com/2018/01/the-google-brain-team-looking-back-on.html>

Google Brain Team Research topic URL - <https://ai.google/research/pubs/?team=brain&collection=ICLR>

Jeff Dean Lecture **for YC AI** youtube URL – youtu.be/HcStIHGpjN8 -- g.co/brain

Intro:

Google brain – to make machine intelligence, to use the research to help and improve people life such as health, robotic.

Open-source system – **tensorflow**

Good handle on system to store and manipulate data – understanding

**Deep Neural network**-: result get better with

More data

Bigger model

More computation

Better algorithms & insights(which model are easily to train)

**Speech recognition:** – acoustic input -> deep recurrent neural network -> how clod is it outside. (recued word error by 30%)

The inception Architecture(GoogLeNet,2014) going deeper with convolutions -> **image recognition:.** Google search – photos

<https://www.cs.unc.edu/~wliu/papers/GoogLeNet.pdf>

**Medical imaging** – using similar model for detecting diabetic retinopathy in retinal images.

Image captioning -> translate the picture into a sentence

Neural working:

**Networks with functions and programs** -> given a context and a questions. What is the answer. Using Dep neural network

**Joint training of many tasks** -> different input and different output using deep neural networks

**Combining vision with robotics** – deep learning for robots: learning from large-scale interaction. Picking up items constantly and collect data.

**Concrete Problems in AI safety-** research paper about the rising attention to the potential impacts of AI technologies on society.

Sequence to sequence models can directly translate foreign speech.

<https://ai.google/research/pubs/pub46151>

Explain neural networks: PatternNet and PatternAttribution (Linear Models)

<https://ai.google/research/pubs/pub46693>

[Google's Neural Machine Translation System: Bridging the Gap between Human and Machine Translation](https://ai.google/research/pubs/pub45610)

[Yonghui Wu](https://ai.google/research/people/104868" \o "Yonghui Wu), [Mike Schuster](https://ai.google/research/people/MikeSchuster), [Zhifeng Chen](https://ai.google/research/people/author8126" \o "Zhifeng Chen), [Quoc V. Le](https://ai.google/research/people/QuocLe), [Mohammad Norouzi](https://ai.google/research/people/MohammadNorouzi), [Wolfgang Macherey](https://ai.google/research/people/author7590), Maxim Krikun, Yuan Cao, [Qin Gao](https://ai.google/research/people/105154), [Klaus Macherey](https://ai.google/research/people/author29100), [Jeff Klingner](https://ai.google/research/people/JeffKlingner), Apurva Shah, [Melvin Johnson](https://ai.google/research/people/105147), [Xiaobing Liu](https://ai.google/research/people/104903" \o "Xiaobing Liu), [Łukasz Kaiser](https://ai.google/research/people/LukaszKaiser" \o "Łukasz Kaiser), [Stephan Gouws](https://ai.google/research/people/StephanGouws), [Yoshikiyo Kato](https://ai.google/research/people/105749" \o "Yoshikiyo Kato), Taku Kudo, [Hideto Kazawa](https://ai.google/research/people/HidetoKazawa" \o "Hideto Kazawa), [Keith Stevens](https://ai.google/research/people/105282), George Kurian, Nishant Patil, Wei Wang, [Cliff Young](https://ai.google/research/people/105499), Jason Smith, [Jason Riesa](https://ai.google/research/people/JasonRiesa), [Alex Rudnick](https://ai.google/research/people/AlexRudnick), [Oriol Vinyals](https://ai.google/research/people/OriolVinyals), [Greg Corrado](https://ai.google/research/people/GregCorrado), Macduff Hughes, [Jeffrey Dean](https://ai.google/research/people/jeff)

*CoRR*, vol. abs/1609.08144 (2016)