Springboard

Machine Learning: Keeping Up With The State Of The Art

This paper will highlight some of the best places to find machine learning research online.

Machine learning is a young field. There are currently thousands of researchers doing groundbreaking work. If you don't put in the effort to keep up with new developments, you'll fall behind the curve. Many tools you'll learn in this course were invented in the last two years. The solution to a problem stumping you at work could be in the latest research paper coming out of MIT, but it's up to you to find that article. Keeping up with new developments pays off, in terms of your time, technological capabilities, and earning potential.

Foundational Knowledge

A great place to start your independent learning is floodsung's GitHub repository **Deep Learning Papers Reading Roadmap.** There are about 100 papers to peruse at your leisure. The papers are organized by level of detail, age, niche, and whether the technology discussed is considered state of the art. On Andrew Ng's recommended schedule of reading 1-2 ML papers a week, this repo could easily take you a year to work through. The papers have been carefully curated to give you a tremendous theoretical and research foundation. Please don't feel like you need to rush through them! You can take your time and absorb the information.

University Archives

Many of floodsung's papers are hosted on arXiv.org - Cornell's online research repository. About 25% of the papers are CS-related, many of them concerning AI/ML advancement. There are about 3500 new CS papers added monthly, and about 60,000 papers on the site on machine learning. Reading those on Dr. Ng's schedule would take 600 years! If you don't want to be reading until 2620, you'll need to find a way to separate the wheat from the chaff.

Arxiv-sanity is a tool to make navigating arXiv easy. On a high level, it aggregates all of the machine learning specific papers in one place. You can find the most popular papers, trending research, and a stream of newly submitted documents. The site previews the abstract of every paper so you can get a sense of whether you'd be interested in the content. As an extra perk, it has a "show similar" feature to find related research papers.

Research Conferences

There are a handful of annual AI conferences, where top researchers and practitioners meet to share what they've been working on. Attending these conferences is the ideal way to network and keep up with the latest trends, but here's the next best thing. Research presented at conferences is normally published on their sites. Exploring their papers is a great way to keep up with the truly cutting edge and to find research that has not made its way into the mainstream. Check out these sites after you've gained a good understanding of the material on floodsung's repository.

Neural Information Processing Systems Conference - NIPS
NIPS's or NeurIPS is a conference that focuses on machine learning and computational neuroscience. It has been going strong for over 30 years.

Association For Computational Linguistics - ACL
Move over Austin City Limits! There's only one ACL that matters in machine learning, the Association For Computational Linguistics. This conference, as the name suggests, focuses on the intersection of machine learning and language. This is one of the best places to learn about new developments in NLP!

Conference For Empirical Methods in Natural Language Processing - EMNLP
EMNLP is a sister conference in ACL. As the name suggests, this conference also focuses on new advancements in Natural Language Processing. If you are interested in NLP, make sure you visit this conference or this research repository.

International Conference on Machine Learning - ICML
ICML is one of the longest-running conferences for machine learning. This year it celebrates its 37th iteration. Many amazing technologies debuted at ICML. They keep extensive records of the papers that have been presented at their conference over the past four decades. There's sure to be something there that piques your interest.

Association For The Advancement Of Artificial Intelligence - AAAI
The AAAI is one of the most prestigious organizations in artificial intelligence. Many of the most important computer scientists of the 20th century have served as chairs of AAAI, including Allan Newell, inventor of the first Artificial Intelligence program Logic Theorist; Edward Feigenbaum, the father of expert systems; and John McCarthy, who coined the term artificial intelligence. The AAAI has a treasure trove of research for you to explore

Computer Vision Foundation - CVF
The Computer Vision Foundation is a non-profit focused on advancing all aspects of computer vision. If this subfield interests you, take a while to explore what's coming out of this conference lately. On their site, you can also find which papers have won top Computer Vision awards in

the last year - for instance, you can find the 2019 ImageNet paper that took the Computer Vision world by storm.

Enterprise Business Solutions

Google, Facebook, Amazon, and Microsoft develop many of the machine learning tools you'll come to know and love. Tech giants like these have vast resources and incredible brainpower to throw at machine learning problems, and they are constantly innovating and making machine learning more accessible to everyone. A great place to keep up with ML/AI trends, especially business applicable developments, is by reading their blogs.

Google AI - This is the best place to see what Google is cooking up in the AI world, and to learn about new TensorFlow applications.

Facebook Research - Did you know that Facebook has an entire research division? With some of the top engineers in the world and a wealth of data at their disposal, Facebook is making waves in NLP, computer vision, and many other areas of machine learning.

Microsoft Research - Microsoft might not be the first place that comes to mind when you think about machine learning, but make no mistake, plenty of innovation is happening in their laboratories. Check under the Intelligence section of their "Research areas" drop-down for all of the latest coming out of Seattle.