AtHomeWithAI

Curated Resource List

A list of educational resources curated by DeepMind Scientists and Engineers for students interested in learning more about artifical intelligence, machine learning and other related topics.

Resource	Link	Type	Description	Topic	Target audience
21 Definitions of Fairness and Their Politics	https://www.youtube.com/embed/jlXluYdnyyk	Video lecture	Arvind Narayanan discusses the various definitions of fairness and their tradeoffs they present for society	Ethics	Introductory
3Blue1Brown Youtube channel	https://www.youtube.com/channel/UCYO_jab_esuFRV4b17AJtAw	Video series	Great tutorial series. Videos on Linear Algebra and Neural Networks from Ground Up particularly useful	Theory and Foundations	Introductory
A 2020 vision of Linear Algebra (Gilbert Strang, MIT)	https://www.youtube.com/watch?v=YrHlHbtiSMQ&list=PLUl	Video lectures	Concisely summarises a whole course of linear algebra, with technical details, through a new lens: how Linear Algebra is being applied to the real world, especially in Machine Learning.	Theory and Foundations	Introductory
A Code-first Introduction to Natural Language Processing	https://www.fast.ai/2019/07/08/fastai-nlp/	Video lectures	An introduction to natural language processing for people with a technical background.	Natural Language Processing	Introductory
A Primer on Neural Network Models for Natural Language Processing	https://www.jair.org/index.php/jair/article/view/11103	Paper	A clear review of how neural networks are used in natural language processing.	Natural Language Processing	Intermediate
AGI Safety Literature Review	https://arxiv.org/pdf/1805.01109.pdf	Paper	Great overview of AGI safety literature up to 2018, with hundreds of references to follow up on.	Safety	Intermediate
AI Alignment newsletter by Rohin Shah	http://rohinshah.com/alignment-newsletter/	Newsletter	Weekly newsletter summarizing recent work in AI safety	Safety	Intermediate
AI safety YouTube channel by Robert Miles	https://www.youtube.com/channel/UCLB7AzTwc6VFZrBsO2ucBMg/vid	Video lectures	Educational and entertaining videos introducing key concepts in AGI safety to a popular audience	Safety	Introductory
Alberta RL 4-course Specialization	https://www.coursera.org/specializations/reinforcement-learning	Online course	A four course sequence on RL, starting from Bandits and ending at RL with function approximaton (NNs), Policy Gradient methods, and Average Reward.	Reinforcement Learning	Introductory
Amii's Coursera Machine Learning: Algorithms in the Real World Specialization	https://www.coursera.org/specializations/machine-learning-algorithms-	Online course	Excellent view into framing and identifying ML problems and their solutions	Machine Learning	Intermediate
An overview of gradient descent optimization algorithms	https://ruder.io/optimizing-gradient-descent/	Blog post	A comprehensive blog post that reviews the main variants of gradient descent that are used to optimize neural networks.	Deep Learning	Introductory
Andrej Karpathy blog/hacker guide	http://karpathy.github.io/neuralnets/	Blog post	Very easily accessible intro to neural nets. Also his blog has very digestible practicle advice.	Deep Learning	Introductory
Andrew Ng's Machine Learning course	https://www.coursera.org/learn/machine-learning	Online course	Very hands-on and comprehensive first course for machine learning. Since it is on coursera, you can have your assignment "graded" and also have TA's and other peers to help you get through the materials.	Theory and Foundations	Introductory
Ankur Handa's blog on Sim2Real	https://sim2realai.github.io/	Blog post	Useful posts about simulators, sim2real transfer learning, physics engines	Control and Robotics	Intermediate
Bayesian Reasoning and Machine Learning	http://web4.cs.ucl.ac.uk/staff/D.Barber/pmwiki/pmwiki.	Online book	Basics of probabilistic reasoning and modelling	Machine Learning	Intermediate
Brain Inspired Podcast	https://braininspired.co/	Podcast	A podcast where neuroscience and AI converge.	Neuroscience	Intermediate
Causal Inference in Statistics: A Primer	http://bayes.cs.ucla.edu/PRIMER/	Online preprint	Excellent introduction into causal inference. This is a preprint but complete version of the final book.	Theory and Foundations	Intermediate
Causal Inference: What If	https://www.hsph.harvard.edu/miguel-hernan/causal-	Online book	New book on causal inference	Theory and Foundations	Intermediate

Center for Brains Minds + Machines Summer School Lectures	https://ocw.mit.edu/resources/res-9-003-brains-minds-and-	Video series	Lectures from famed Woods Hole summer school on computational *cognitive* neuroscience (aka more about high-level cognition, behavior, links to machine learning)	Neuroscience	Intermediate
Chelsea Finn's Multi-Task and Meta-Learning Course	https://www.youtube.com/watch?v=0rZtSwNOTQo&list=PL	Video lectures	Video lectures on mutli-task and meta-learning	Meta-Learning	
Chris Olah blog	https://colah.github.io/	Blog posts	Chris Olah has a very educational approach for exampling key concets (such as understanding convets or lstms) in machine learning in a indepth manner. Olah is passionate about education and does a fantastic job putting his posts together.	Deep Learning	Intermediate
Computational Cognitive Modeling @ NYU	https://brendenlake.github.io/CCM-site/	Lecture slides & readings	An overview of computational approaches to modeling human cognition, with close ties to artificial intelligence and machine learning.	Neuroscience	Introductory
Computational models of the neocortex	http://web.stanford.edu/class/cs379c/calendar.html	Class notes	Very interdisciplinary and cutting edge	Neuroscience	Intermediate
Concrete Problems in AI safety	https://arxiv.org/abs/1606.06565	Paper	Useful overview of AI safety problems, the original and now classic paper for the field of AI safety	Safety	Introductory
Crash Course AI	https://www.youtube.com/playlist?list=PL8dPuuaLjXtO65Le	Video series	Useful, well-produced intro series, probably best for high schoolers and novices?	Deep Learning	Introductory
CS224n: Natural Language Processing with Deep Learning	http://web.stanford.edu/class/cs224n/	Video lectures	Stanford's course on state-of-the-art natural language processing.	Natural Language Processing	Intermediate / Advanced
CS231: Convolutional Neural Networks for Visual Recognition (Stanford)	https://www.youtube.com/playlist?list=PL3FW7Lu3i5JvHM8lj	Video lectures	Wonderful class notes here: https://cs231n.github.io/ A good continuation of the Andrew Ng's course that dives much deeper into convolutional neural networks (that was briefly touched on at the end of the previous course) and introduces	Deep Learning	Intermediate
CS231n: Convolutional Neural Networks for Visual Recognition (Stanford's legendary CNN lectures)	http://cs231n.stanford.edu/	Video lectures	Provides a great overview on classical and more recent work on convnets which build the foundation for much most work with visual data.	Deep Learning	Mixed
CS330: Metalearning and Multitask	https://cs330.stanford.edu/	Video lectures	Provides an overview of recent work in meta learning and multitask learning. Inspiring and very useful to keep up to speed with recent ideas in these fields.	Reinforcement Learning	Advanced
David MacKay, information theory course videos	http://videolectures.net/course_information_theory_pattern_recognit	Video lectures	Covers broad set of areas in MacKay's Feymanesque lecturing style	Theory and Foundations	Intermediate
David MacKay, all videolectures	http://videolectures.net/david_mackay/	Video lectures	David MacKay is a well known name in the field, particularly focusing on statistics and probabilistic machine learning.	Probabilistic Machine Learning	Intermediate / Advanced
David MacKay, Gaussian Process Basics	http://videolectures.net/gpip06_mackay_gpb/	Video Lecture	This is the most accessible and clear introduction to Gaussian Processes around!	Machine Learning	Introductory
David MacKay's book "Information Theory, Inference, and Learning Algorithms"	https://www.inference.org.uk/itprnn/book.pdf	Book	David MacKay offers a unique perspective on the connections between information theory, inference and learning. His writing style is unique in its style and humour1	Machine Learning	Introductory
David MacKay's Course on Information Theory, Pattern Recognition, and Neural Networks	https://www.youtube.com/watch?v=BCiZcOn6COY&list=PLr	Video lectures	A course on Information theory, pattern recognition and neural networks by the legendary David MacKay	Theory and Foundations	Intermediate
David Silver, Introduction to Reinforcement Learning	https://www.youtube.com/playlist?list=PLqYmG7hTraZBiG_X	Video lectures	Covers ideas in Sutton's and Barto's textbook with a very good flow: Why should we think about these problems? How do the ideas we discussed so far relate to one another? etc.	Reinforcement Learning	Intermediate
David Silver's RL Course from UCL	https://www.youtube.com/playlist?list=PLqYmG7hTraZDM-	Video lectures	Useful for anyone wanting to learn about RL	Reinforcement Learning	Intermediate
Decision-theoretic foundations for statistical causality	https://arxiv.org/abs/2004.12493	Online article	Alternative way to formulate causal inference oprations	Theory and Foundations	Advanced
Deep Bayes summer school lectures and lab materials	https://deepbayes.ru/2019/	Video lectures	Lectures and practicals on probabilistic modelling and Bayesian learning	Theory and Foundations	Intermediate
Deep Learning at Oxford 2015	https://www.youtube.com/playlist?list=PLE6Wd9FR--	Video lectures	Oxford's course on Deep Learning in 2015.	Deep Learning	Intermediate
Deep Learning Book	http://www.deeplearningbook.org/	Book	A comprehensive introduction to the fundamentals of Deep Learning by some of the pioneers in the field.	Deep Learning	Introductory
Deep Learning Indaba Practicals	https://github.com/deep-learning-indaba/indaba-pracs-	Colabs	There are guided tutorials developed and tested over many years to train people in Deep Learning, from the fundamentals up to advanced topics like building an autodiff framework or training a GAN.	Deep Learning	Introductory

Dive into Deep Learning	https://d2l.ai/	Book	Great format, which makes learning key ML concepts more fun and interactive.	Deep Learning	Introductory
DL + RL course with UCL	https://www.youtube.com/playlist?list=PLqYmG7hTraZDNJre	Video lectures	This course covered a lot of ground on deep learning and reinforcement learning. It consisted of two, mostly separate, tracks: one on DL and one on RL, which can be consumed separately.	RL + DL	Intermediate
EEML (first/second edition) Lab materials	https://github.com/tmlss2018/PracticalSessions ; https://github.	Colab	Lab material for EEML summer school, covering topics like vision, RNN, unsupervised learning and RL. The material come in the form of exercises with solutions supposed to help introduce a lot of basic ideas	RL + DL	Introductory
EEML slides from lectures	https://www.eeml.eu/previous-editions/eeml19/resource	Slides	Slides for the lectures from previous year edition of EEML (unfortunately no recordnings). This cover great set of material from intro material to more complex presentations.	RL + DL	Intermediate
Elements of Causal Inference: Foundations and Learning Algorithms	https://mitpress.mit.edu/books/elements-causal-inference	Online book	This books introduces the reader to causal inference in a simple and accessible way.	Theory and Foundations	Intermediate
Emma Brunskill RL Course	https://www.youtube.com/watch?v=FgzM3zpZ55o&list=PLo	Video lectures	Video lectures on reinforcement learning from Emma Brunskill's course at Stanford.	Reinforcement Learning	Introductory
Ermon's graphical models course at Stanford	https://ermongroup.github.io/cs228-notes/	Lectures notes	Covers a lot of probabilistic methods	Unsupervised Learning and Generative Models	Intermediate
Essence of Linear Algebra (3blue1brown)	https://www.youtube.com/playlist?list=PLZHQObOWTQDPD	Video series	Provides very good *intuition* into the key ideas of linear algebra, without going too much into the technical details. Accompanies a traditional linear algebra textbook or college course.	Theory and Foundations	Introductory
Fairness and Machine Learning Book	https://fairmlbook.org/	Book, Video Lectures	Overview of Fairness in Machine Learning Topics	Ethics	Intermediate
Francis Bach's blog	https://francisbach.com/	Blog	Useful tricks and tips, insightful analysis of various machine learning concepts	Theory and Foundations	Intermediate
Full Stack Deep Learning	https://fullstackdeeplearning.com/march2019	Online Course	Deep learning models do not live in a vacuum. This course highlights the practical aspects of deep learning such as model deployment, infrastructure, debugging, and even preparing for deep learning interviews.	Deep Learning	Intermediate
Getting into machine learning	http://www.furidamu.org/blog/2018/12/06/getting-into-machine-	Blog	A blog for those looking to get into machine learning	Machine Learning	
Good resource for learning foundations of computer science	https://code.org/break	Online course	Provides high-quality, live, interactive computer science classrooms. Code.org is a nonprofit dedicated to expanding access to computer science in schools and increasing participation by women and underrepresented youth.	Computer Science	Introductory
Goodman (1955). The New Riddle of Induction.	http://fitelson.org/confirmation/goodman_1955.pdf	Book chapter	Philosophical background on inductive bias and why inferences and induction is hard.	Philosophy	Intermediate
Harvard University's Justice Course	http://justiceharvard.org/	Video lectures	In-depth and engaging lecture series on justice and moral philosophy.	Ethics	Intermediate
How to Use t-SNE Effectively	https://distill.pub/2016/misread-tsne/	Interactive textbook	It provides an interactive, insightful journey into all the major pitfalls of using tSNE, which has became one of the most commonly use low-dimensional data embeddings. I found it extremely useful to better understand what one can really	Unsupervised Learning and Generative Models	Intermediate
Human Compatible:Artificial Intelligence and the Problem of Control by Stuart Russell	https://www.amazon.com/Human-Compatible-Artificial-	Book	Must-read book on AI safety by an AI pioneer	Safety	Introductory
Human intelligence enterprise course	https://ocw.mit.edu/courses/electrical-engineering-and-	Course materials	History of human intelligence	Theory and Foundations	Intermediate
Intro to machine learning talk at Lviv workshop	https://youtu.be/NnAvhTs_WJ8; https://sites.google.	Video lecture	Introduction to machine learning. It introduces some theory on which one can build the machinery of deep learning	Deep Learning	Intermediate
Is the Abstract Mathematics of Topology Applicable to the Real World?	https://video.ias.edu/mini-symposium-topology-2015	Video series	The introduction is a great description of the basics of topology. The seminar goes on to describe certain applications in a really compelling way	Theory and Foundations	Intermediate
KhanAcademy courses	https://www.khanacademy.org/math/statistics-	Online course	Great introductions for beginners into Statistics, Probability Theory, Calculus, necessary to understand ML.	Theory and Foundations	Introductory
Khipu videos and practicals	https://khipu.ai/ & https://github.com/khipu-ai/practicals-2019	Videos of lectures, slides and colabs	Resources from Khipu, including videos and practicals that students can go along wtih.	Deep Learning	Intermediate
Learning from Data course - Caltech	http://work.caltech.edu/telecourse.html	Video lectures	Gentle introduction to Machine Learning. Topics are explained very clearly.	Theory and Foundations	Introductory

Lecture notes on Machine Learning	http://minds.jacobs-university.de/uploads/teaching/lect	Lecture Notes	Lecture notes from Herbert Jaeger's machine learning course. Covering a lot of the basics and standard ML topics. Written very well (almost like a book).	Machine Learning	Introductory
Lecture Notes on Monte Carlo	https://www.cmpe.boun.edu.tr/~cemgil/Courses/cmp	Lecture Notes	A short tutorial on the Monte Carlo method	Theory and Foundations	Introductory
Lectures from Methods in Computational Neuroscience Woods Hole Summer School	https://mbl.hosted.panopto.com/Panopto/Pages/Ses	Video series	Lectures from famed Woods Hole summer school on computational *systems* neuroscience (aka more about circuits and system properties of the brain)	Neuroscience	Intermediate
Lex Fridman's AI podcast	https://www.youtube.com/playlist?list=PLrAXtmErZgOdP_8	Podcast	Conversations with a diverse and impressive set of guest speakers.	Science	Introductory
Lilian Weng's blog	https://lilianweng.github.io/lil-log/	Survey blog posts	Lilian's blog provides overview blog posts for various fields from curriculum learning, self-supervised learning, meta learning etc. The blogposts are not too detailed and sometimes a bit specialised but are quite often even updated to	Deep Learning	Intermediate
Machine Learning at UBC 2012	https://www.youtube.com/playlist?list=PLE6Wd9FR--	Video Lecture	UBC's course on Machine Learning in 2012.	Machine Learning	Introductory
Machine Learning, Probability and Graphical Models (Sam Roweis)	http://videolectures.net/mlss06tw_roweis_mlpgm/	Video Lectures	A clear explanation by the legendary Sam Roweis on graphical models.	Machine Learning	Intermediate
Marr's Levels of Analysis (Vision, 1982, Chapter 1)	http://ling.umd.edu/~idsardi/728/Marr/Marr%20%27Vision%27%	Book chapter	The book chapter describing Marr's "Levels of Analysis" (1982), which are an important framework for thinking about intelligent systems.	Neuroscience	Introductory
Mathematicalmonk Youtube videos	https://www.youtube.com/channel/UCcAtD_VYwcYwVbTdvArsm7w	Video lectures	Incredbly well explained, goes into examples for useful algorithms such as EM. Good as an additional resource to a book like Bishop.	Unsupervised Learning and Generative Models	Introductory
Mathematics for Machine Learning	https://mml-book.github.io/	Book	Great book that covers basic mathematical concepts needed to do machine learning	Theory and Foundations	Introductory
Mike Bostock interactive visualisations	https://observablehq.com/@mbostock	Live Code	Mike Bostock's interactive visualisations	Computer Science	Intermediate
MIT 6.S191 Intro to Deep Learning	http://introtodeeplearning.com/	Videos, tutorials, assignment.	MIT's introductory course on deep learning and applications.	Deep Learning	Introductory
MIT Brains, Minds, and Machines Summer Course	https://ocw.mit.edu/resources/res-9-003-brains-minds-and-	Video lectures, tutorials, projects	A graduate-level course at the intersection of cognitive science, neuroscience, and AI	Neuroscience	Introductory
MIT Machine Learning course	https://ocw.mit.edu/courses/electrical-engineering-and-	Online course with lecture videos, problem sets, solutions and exams.	Taught in 2006, a great course on the foundamentals (and now history) of machine learning before deep learning and many levels of abstractions became the mainstream.	Theory and Foundations	Intermediate
Monte Carlo Gradient Estimation in Machine Learning	https://arxiv.org/abs/1906.10652	Paper	Useful for anyone doing RL or generative modelling.	Unsupervised Learning and Generative Models	Intermediate
Nando de Freitas Course on Machine Learning	https://www.cs.ox.ac.uk/people/nando.defreitas/machinelearnin	Video lectures and slides	A helpful course on machine learning & the slides that go along with it.	Theory and Foundations	Introductory
NeurIPS 2017 Tutorial on Fairness in Machine Learning	https://vimeo.com/248490141	Video lectures	Solon Barocas and Moritz Hardt provide an in-depth discussion on the sociotechnical elements of Fairness in Machine Learning	Ethics	Introductory
NLP Progress	http://nlpprogress.com/	List of datasets and results	A community-driven website that lists a large number of tasks, datasets, and state-of-the-art results in natural language processing.	Natural Language Processing	Intermediate
Online journal	https://distill.pub/	Journal	Peer-reviewed online journal, allows informative visualisations and code to be included, to facilitate understanding of research works and improve transparency and reproducibility	Deep Learning	Intermediate
OpenAI blog	https://openai.com/blog/	Blog	Accessible presentations of basic and advanced algorithms for RL	Reinforcement Learning	Intermediate
Oxford/DM NLP Course 2017	https://github.com/oxford-cs-deepnlp-2017/lectures	Lecture course	An advanced lecture course on NLP delivered in Oxford by DeepMinders	Natural Language Processing	Advanced
Parallel Distributed Processing	https://stanford.edu/~jlmcc/papers/PDP/Chapter1.pdf (Chapter 1);	Online book	A classic for anyone who wants to understand the roots of deep learning, back when it was "connectionism."	Deep Learning	Introductory
Practical Deep Learning for Coders	https://course.fast.ai/index.html	Online course	Recommended by friends from other technical background (such as physics and maths) as a great entry course to Deep Learning	Deep Learning	Introductory

Princeton Companion to Mathematics	https://isidore.co/calibre/get/pdf/4662	Book	Probably the most amazing maths resource you will ever find. This book provides a thorough overview of the most important concepts in modern mathematics, assuming no background knowledge, and in the self-proclaimed 'bedtime story'	Theory and Foundations	Introductory
Probabilistic Models of Cognition	https://probmods.org/	Interactive textbook	An interactive textbook describing how to use probabilistic models to produce and model human-like behavior.	Neuroscience	Introductory
Probability in high dimensions	https://web.math.princeton.edu/~rvan/APC550.pdf	Lecture Notes	A very readable book "of ideas at the intersection of probability, analysis, and geometry that arise across a broad range of contemporary problems in different areas."	Computer Science	Advanced
Project Euler	https://projecteuler.net/	Problem Solving Community	A series of challenging math + CS problems to stimulate the brain. They are super fun and will lead you to learn things that will help your deep learning career down the road.	Theory and Foundations	Introductory
Ranking of ML online courses	https://www.freecodecamp.org/news/every-single-	Reading list	Quite a comprehensive overview of most of the top online courses on machine learning.	Machine Learning	Introductory
Reinforcement Learning: an Introduction (2018 edition)	http://incompleteideas.net/book/RLbook2018.pdf	Book	This is *the* introductory book of reinforcement learning. Rich does an amazing job at explaining both the fundamental concepts of RL as well as guiding the reader through all the way to advanced open research problems.	Reinforcement Learning	Introductory
Reproducing kernel Hilbert spaces in Machine Learning	http://www.gatsby.ucl.ac.uk/~gretton/coursefiles/rkhscourse.html	Course materials	Useful for anyone interested in generative modelling and beyond.	Unsupervised Learning and Generative Models	Intermediate
Speech and Language Processing	https://web.stanford.edu/~jurafsky/slp3/	Book	The authoritative reference on natural language processing, now in its 3rd version and available online.	Natural Language Processing	Introductory
Spinning Up in Deep RL	https://spinningup.openai.com/en/latest/	Code	This is an educational resource produced by OpenAI that makes it easier to learn about deep reinforcement learning (deep RL).	Reinforcement Learning	Intermediate
Stanford Physics lecture series by Leonard Susskind	https://www.youtube.com/playlist?list=PL6i6OqoDQhQGaG	Video lectures	Great resource for learning many important areas of modern physics, including classical, statistical and quantum mechanics. These lectures assume very little background knowledge, and Leonard is able to introduce and explain complex	Science	Introductory
Stanford's Machine Learning Course	https://www.youtube.com/playlist?list=PLoROMvodv4rMiGQ	Video lectures	Introduction to machine learning course	Machine Learning	Introductory
Stanford's NLP with Deep Learning Course	https://www.youtube.com/playlist?list=PLoROMvodv4rOhcu	Online course	Useful for anyone who wants to get into NLP	Deep Learning	Intermediate
Statistical Learning Theory course	https://www.edx.org/course/statistical-learning	Online course	A free course, led by professors Hasti and Tibshirani, covering a lot of basics of machine learning, oriented towards people with more mathematical backgrounds.	Theory and Foundations	Introductory
Strang All the Key Ideas of Linear Algebra in 1 Lesson	https://www.youtube.com/watch?v=O3NxvLC-5s4&feature=youtu.	Video lecture	Concise, integrative	Theory and Foundations	Intermediate
Strogatz nonlinear dynamics course	https://www.youtube.com/playlist?list=PLbN57C5Zdl6j_qJA	Videos	Video courses on nonlinear dynamics	Control and Robotics	Intermediate
Sunday Classics	http://blog.shakirm.com/sunday-classic-paper/	Reading list	A collection of classical papers on all topics in machine learning, cognitive science, statistics, information theory, neuroscience, artificial intelligence, signal processing, operations research, econometrics, and others.	Machine Learning	
Sutton and Barto's Reinforcement Learning	http://incompleteideas.net/book/the-book-2nd.html	Textbook	This is THE textbook for RL. It builds up from very fundametal concepts to advanced topics. Accompanies David Silver's lectures.	Deep Learning	Intermediate
The Annotated Transformer	https://nlp.seas.harvard.edu/2018/04/03/attention.html	Blog post	Excellent introduction to the dominant NLP model	Natural Language Processing	Advanced
The Book of Why	http://bayes.cs.ucla.edu/WHY/	Book chapers	Light introduction into causal inference and historical excusion on its development	Theory and Foundations	Introductory
The challenge of understanding the brain: where we stand in 2015	https://www.cell.com/neuron/pdf/S0896-6273(15)00256-1.pdf	Paper	Good overview of the more circuit / biology end of neuroscience	Neuroscience	Intermediate
The Trouble with Bias - NeurIPS 2017	https://www.youtube.com/watch?v=fMym_BKWQzk	Video Lecture	Kate Crawford dicsusses the ethical implications of bias in AI systems	Ethics	Introductory
Theoretical Neuroscience	http://www.gatsby.ucl.ac.uk/~lmate/biblio/dayanabbott.pdf	Online book	popular introductory text of theoretical neuroscience	Neuroscience	Intermediate
UofA / Amii Coursera RL Specilization by White and White	https://www.coursera.org/specializations/reinforcement-learning	Online courses	Made by UofA / Amii, a heartland of RL research; Adam White is a DeepMinder; comprehensive and well designed course series that will give the most important fundementals of RL	Reinforcement Learning	Intermediate

Variational inference a feview for statisticians by David Blei	https://arxiv.org/abs/1601.00670	Paper	Provides the best explanaition for VI in the context of generative modelling that I have seen.	Unsupervised Learning and Generative Models	Intermediate
WEKA: a workbench for machine learning	https://www.cs.waikato.ac.nz/ml/weka/	Online resource	A large, free software toolset for getting to know data, data visualuzation, classification, regression, feature selection, and the foundations of data science; I use this regularly to teach others how to see the patterns in data and appreicate how a machine might see and use these and more complicated patterns	Machine Learning	Introductory