



A Word2Vec softmax trainer

Word2vec Word Embedding Tutorial In Python And Tensorflow

Antonio Gulli, Amita Kapoor, Sujit Pal



Word2vec Word Embedding Tutorial In Python And Tensorflow:

Python Deep Learning Projects Matthew Lamons,Rahul Kumar,Abhishek Nagaraja,2018-10-31 Insightful projects to master deep learning and neural network architectures using Python and Keras Key FeaturesExplore deep learning across computer vision natural language processing NLP and image processingDiscover best practices for the training of deep neural networks and their deploymentAccess popular deep learning models as well as widely used neural network architecturesBook Description Deep learning has been gradually revolutionizing every field of artificial intelligence making application development easier Python Deep Learning Projects imparts all the knowledge needed to implement complex deep learning projects in the field of computational linguistics and computer vision Each of these projects is unique helping you progressively master the subject You ll learn how to implement a text classifier system using a recurrent neural network RNN model and optimize it to understand the shortcomings you might experience while implementing a simple deep learning system Similarly you ll discover how to develop various projects including word vector representation open domain question answering and building chatbots using seq to seq models and language modeling In addition to this you ll cover advanced concepts such as regularization gradient clipping gradient normalization and bidirectional RNNs through a series of engaging projects By the end of this book you will have gained knowledge to develop your own deep learning systems in a straightforward way and in an efficient way What you will learnSet up a deep learning development environment on Amazon Web Services AWS Apply GPU powered instances as well as the deep learning AMIImplement seq to seq networks for modeling natural language processing NLP Develop an end to end speech recognition systemBuild a system for pixel wise semantic labeling of an imageCreate a system that generates images and their regionsWho this book is for Python Deep Learning Projects is for you if you want to get insights into deep learning data science and artificial intelligence This book is also for those who want to break into deep learning and develop their own AI projects It is assumed that you have sound knowledge of Python programming

Blueprints for Text Analytics Using Python Jens Albrecht,Sidharth Ramachandran,Christian Winkler,2020-12-04 Turning text into valuable information is essential for businesses looking to gain a competitive advantage With recent improvements in natural language processing NLP users now have many options for solving complex challenges But it s not always clear which NLP tools or libraries would work for a business s needs or which techniques you should use and in what order This practical book provides data scientists and developers with blueprints for best practice solutions to common tasks in text analytics and natural language processing Authors Jens Albrecht Sidharth Ramachandran and Christian Winkler provide real world case studies and detailed code examples in Python to help you get started quickly Extract data from APIs and web pages Prepare textual data for statistical analysis and machine learning Use machine learning for classification topic modeling and summarization Explain AI models and classification results Explore and visualize semantic similarities with word embeddings Identify customer sentiment in

product reviews Create a knowledge graph based on named entities and their relations *AI-Powered Security* Anasooya Khanna,2025-02-20 Step into the future of security with AI Powered Security Advanced Safeguarding Our book takes you on an enlightening journey through the intersection of artificial intelligence and the critical realm of security This comprehensive guide unveils how AI is transforming security protocols offering a proactive defense strategy to anticipate and mitigate risks in real time As our interconnected world faces evolving cyber threats the need for dynamic intelligent defense mechanisms becomes paramount We explore how AI revolutionizes security with machine learning algorithms and neural networks that detect anomalies analyze threats and forecast potential risks Real world case studies highlight practical applications across various sectors from critical infrastructures to financial systems providing actionable insights for security professionals and decision makers Ethics stand at the forefront of our exploration addressing the ethical considerations of deploying intelligent systems We foster a dialogue on responsible AI use ensuring privacy bias and accountability standards are met AI Powered Security is not just a manual but a guide for embracing the future of security Whether you re a security professional technologist or enthusiast this book offers a holistic understanding of AI s role in safeguarding our digital frontiers ensuring a resilient and secure future

Python Natural Language Processing Jalaj Thanaki,2017-07-31 Leverage the power of machine learning and deep learning to extract information from text data About This Book Implement Machine Learning and Deep Learning techniques for efficient natural language processing Get started with NLTK and implement NLP in your applications with ease Understand and interpret human languages with the power of text analysis via Python Who This Book Is For This book is intended for Python developers who wish to start with natural language processing and want to make their applications smarter by implementing NLP in them What You Will Learn Focus on Python programming paradigms which are used to develop NLP applications Understand corpus analysis and different types of data attribute Learn NLP using Python libraries such as NLTK Polyglot SpaCy Standford CoreNLP and so on Learn about Features Extraction and Feature selection as part of Features Engineering Explore the advantages of vectorization in Deep Learning Get a better understanding of the architecture of a rule based system Optimize and fine tune Supervised and Unsupervised Machine Learning algorithms for NLP problems Identify Deep Learning techniques for Natural Language Processing and Natural Language Generation problems In Detail This book starts off by laying the foundation for Natural Language Processing and why Python is one of the best options to build an NLP based expert system with advantages such as Community support availability of frameworks and so on Later it gives you a better understanding of available free forms of corpus and different types of dataset After this you will know how to choose a dataset for natural language processing applications and find the right NLP techniques to process sentences in datasets and understand their structure You will also learn how to tokenize different parts of sentences and ways to analyze them During the course of the book you will explore the semantic as well as syntactic analysis of text You will understand how to solve various ambiguities in processing human

language and will come across various scenarios while performing text analysis You will learn the very basics of getting the environment ready for natural language processing move on to the initial setup and then quickly understand sentences and language parts You will learn the power of Machine Learning and Deep Learning to extract information from text data By the end of the book you will have a clear understanding of natural language processing and will have worked on multiple examples that implement NLP in the real world Style and approach This book teaches the readers various aspects of natural language Processing using NLTK It takes the reader from the basic to advance level in a smooth way

Disinformation in Open Online Media Max van Duijn, Mike Preuss, Viktoria Spaiser, Frank Takes, Suzan Verberne, 2020-10-20 Chapters Identifying Political Sentiments on YouTube A Systematic Comparison regarding the Accuracy of Recurrent Neural Network and Machine Learning Models Do Online Trolling Strategies Differ in Political and Interest Forums Early Results and Students Assessing Digital News and Misinformation are available open access under a Creative Commons Attribution 4.0 International License via link [springer.com](https://www.springer.com)

Ambient Communications and Computer Systems Yu-Chen Hu, Shailesh Tiwari, Munesh C. Trivedi, K. K. Mishra, 2022-05-07 This book features high quality peer reviewed papers from the Fourth International Conference on Recent Advancements in Computer Communication and Computational Sciences RACCCS 2021 held at Aryabhata College of Engineering and Research Center Ajmer India on August 20-21, 2021 Presenting the latest developments and technical solutions in computational sciences it covers a variety of topics such as intelligent hardware and software design advanced communications intelligent computing technologies advanced software engineering the web and informatics and intelligent image processing As such it helps those in the computer industry and academia to use the advances in next generation communication and computational technology to shape real world applications

Statistics in Precision Health Yichuan Zhao, Ding-Geng Chen, 2024-07-09 This book discusses statistical methods and their innovative applications in precision health It serves as a valuable resource to foster the development of this growing field within the context of the big data era The chapters cover a wide range of topics including foundational principles statistical theories new procedures advanced methods and practical applications in precision medicine Particular attention is devoted to the interplay between precision health big data and mobile health research while also exploring precision medicine's role in clinical trials electronic health record data analysis survival analysis and genomic studies Targeted at data scientists statisticians graduate students and researchers in academia industry and government this book offers insights into the latest advances in personalized medicine using advanced statistical techniques

Cyber Security Xiaochun Yun, Weiping Wen, Bo Lang, Hanbing Yan, Li Ding, Jia Li, Yu Zhou, 2019-02-19 This open access book constitutes the refereed proceedings of the 15th International Annual Conference on Cyber Security CNCERT 2018 held in Beijing China in August 2018 The 14 full papers presented were carefully reviewed and selected from 53 submissions The papers cover the following topics emergency response mobile internet security IoT security cloud security threat intelligence analysis vulnerability artificial intelligence

security IPv6 risk research cybersecurity policy and regulation research big data analysis and industrial security **Natural Language Processing with TensorFlow** Thushan Ganegedara,2018-05-31 Write modern natural language processing applications using deep learning algorithms and TensorFlow Key Features Focuses on more efficient natural language processing using TensorFlow Covers NLP as a field in its own right to improve understanding for choosing TensorFlow tools and other deep learning approaches Provides choices for how to process and evaluate large unstructured text datasets Learn to apply the TensorFlow toolbox to specific tasks in the most interesting field in artificial intelligence Book Description Natural language processing NLP supplies the majority of data available to deep learning applications while TensorFlow is the most important deep learning framework currently available Natural Language Processing with TensorFlow brings TensorFlow and NLP together to give you invaluable tools to work with the immense volume of unstructured data in today's data streams and apply these tools to specific NLP tasks Thushan Ganegedara starts by giving you a grounding in NLP and TensorFlow basics You'll then learn how to use Word2vec including advanced extensions to create word embeddings that turn sequences of words into vectors accessible to deep learning algorithms Chapters on classical deep learning algorithms like convolutional neural networks CNN and recurrent neural networks RNN demonstrate important NLP tasks as sentence classification and language generation You will learn how to apply high performance RNN models like long short term memory LSTM cells to NLP tasks You will also explore neural machine translation and implement a neural machine translator After reading this book you will gain an understanding of NLP and you'll have the skills to apply TensorFlow in deep learning NLP applications and how to perform specific NLP tasks What you will learn Core concepts of NLP and various approaches to natural language processing How to solve NLP tasks by applying TensorFlow functions to create neural networks Strategies to process large amounts of data into word representations that can be used by deep learning applications Techniques for performing sentence classification and language generation using CNNs and RNNs About employing state of the art advanced RNNs like long short term memory to solve complex text generation tasks How to write automatic translation programs and implement an actual neural machine translator from scratch The trends and innovations that are paving the future in NLP Who this book is for This book is for Python developers with a strong interest in deep learning who want to learn how to leverage TensorFlow to simplify NLP tasks Fundamental Python skills are assumed as well as some knowledge of machine learning and undergraduate level calculus and linear algebra No previous natural language processing experience required although some background in NLP or computational linguistics will be helpful **Deep Natural Language Processing** Jochen Hirschle,2022-04-11 Von der logistischen Regression über Feed Forward Netze zu Encoder Decoder Modellen Leicht verständlich mit textbasierten Erklärungen und wenigen Formeln Mit Fokus auf der Verarbeitung deutschsprachiger Texte Ausführliche Python Code Erläuterungen im Buch und Jupyter Notebooks auf GitHub Ihr exklusiver Vorteil E-Book inside beim Kauf des gedruckten Buches Das Buch bietet eine leicht verständliche Einführung in

Machine Learning Algorithmen im Allgemeinen und in die Verarbeitung von Textdaten mit Deep Learning Verfahren im Besonderen Es veranschaulicht die theoretischen Konzepte bew hrter und neuerer NLP Ans tze und f hrt in die praktische Umsetzung ein Im Fokus stehen insbesondere folgende Verfahren Vektorisierung von W rtern mit Word Embedding Verarbeitung von Texten mit rekurrenten und konvolutionalen neuronalen Netzen Aufbau von Sequence to Sequence Modellen zur bersetzung und f r Textzusammenfassungen Arbeit mit der Transformers Bibliothek und Hugging Face Anhand praktischer Anwendungen Klassifizierung von Texten Rechtschreibkorrektur bersetzung Frage Antwort System wird gezeigt wie sich Textdaten vorbereiten und effektive Lernmodelle mit Bibliotheken wie Transformers TensorFlow Keras und Scikit Learn aufbauen trainieren und produktiv einsetzen lassen [Natural Language Processing with TensorFlow](#) Thushan Ganegedara, Andrei Lopatenko, 2022-07-29 From introductory NLP tasks to Transformer models this new edition teaches you to utilize powerful TensorFlow APIs to implement end to end NLP solutions driven by performant ML Machine Learning models Key Features Learn to solve common NLP problems effectively with TensorFlow 2 x Implement end to end data pipelines guided by the underlying ML model architecture Use advanced LSTM techniques for complex data transformations custom models and metrics Book Description Learning how to solve natural language processing NLP problems is an important skill to master due to the explosive growth of data combined with the demand for machine learning solutions in production Natural Language Processing with TensorFlow Second Edition will teach you how to solve common real world NLP problems with a variety of deep learning model architectures The book starts by getting readers familiar with NLP and the basics of TensorFlow Then it gradually teaches you different facets of TensorFlow 2 x In the following chapters you then learn how to generate powerful word vectors classify text generate new text and generate image captions among other exciting use cases of real world NLP TensorFlow has evolved to be an ecosystem that supports a machine learning workflow through ingesting and transforming data building models monitoring and productionization We will then read text directly from files and perform the required transformations through a TensorFlow data pipeline We will also see how to use a versatile visualization tool known as TensorBoard to visualize our models By the end of this NLP book you will be comfortable with using TensorFlow to build deep learning models with many different architectures and efficiently ingest data using TensorFlow Additionally you ll be able to confidently use TensorFlow throughout your machine learning workflow What you will learn Learn core concepts of NLP and techniques with TensorFlow Use state of the art Transformers and how they are used to solve NLP tasks Perform sentence classification and text generation using CNNs and RNNs Utilize advanced models for machine translation and image caption generation Build end to end data pipelines in TensorFlow Learn interesting facts and practices related to the task at hand Create word representations of large amounts of data for deep learning Who this book is for This book is for Python developers and programmers with a strong interest in deep learning who want to learn how to leverage TensorFlow to simplify NLP tasks Fundamental Python skills are assumed as well as basic knowledge of

machine learning and undergraduate level calculus and linear algebra No previous natural language processing experience required

[Learning TensorFlow](#) Tom Hope, Yehezkel S. Resheff, Itay Lieder, 2017-08-09 Roughly inspired by the human brain deep neural networks trained with large amounts of data can solve complex tasks with unprecedented accuracy This practical book provides an end to end guide to TensorFlow the leading open source software library that helps you build and train neural networks for computer vision natural language processing NLP speech recognition and general predictive analytics Authors Tom Hope Yehezkel Resheff and Itay Lieder provide a hands on approach to TensorFlow fundamentals for a broad technical audience from data scientists and engineers to students and researchers You'll begin by working through some basic examples in TensorFlow before diving deeper into topics such as neural network architectures TensorBoard visualization TensorFlow abstraction libraries and multithreaded input pipelines Once you finish this book you'll know how to build and deploy production ready deep learning systems in TensorFlow Get up and running with TensorFlow rapidly and painlessly Learn how to use TensorFlow to build deep learning models from the ground up Train popular deep learning models for computer vision and NLP Use extensive abstraction libraries to make development easier and faster Learn how to scale TensorFlow and use clusters to distribute model training Deploy TensorFlow in a production setting

Learn TensorFlow 2.0 Pramod Singh, Avinash Manure, 2019-12-17 Learn how to use TensorFlow 2.0 to build machine learning and deep learning models with complete examples The book begins with introducing TensorFlow 2.0 framework and the major changes from its last release Next it focuses on building Supervised Machine Learning models using TensorFlow 2.0 It also demonstrates how to build models using customer estimators Further it explains how to use TensorFlow 2.0 API to build machine learning and deep learning models for image classification using the standard as well as custom parameters You'll review sequence predictions saving serving deploying and standardized datasets and then deploy these models to production All the code presented in the book will be available in the form of executable scripts at Github which allows you to try out the examples and extend them in interesting ways What You'll Learn Review the new features of TensorFlow 2.0 Use TensorFlow 2.0 to build machine learning and deep learning models Perform sequence predictions using TensorFlow 2.0 Deploy TensorFlow 2.0 models with practical examples Who This Book Is For Data scientists machine and deep learning engineers

[TensorFlow in Action](#) Thushan Ganegedara, 2022-11-01 Unlock the TensorFlow design secrets behind successful deep learning applications Deep learning StackOverflow contributor Thushan Ganegedara teaches you the new features of TensorFlow 2 in this hands on guide In TensorFlow in Action you will learn Fundamentals of TensorFlow Implementing deep learning networks Picking a high level Keras API for model building with confidence Writing comprehensive end to end data pipelines Building models for computer vision and natural language processing Utilizing pretrained NLP models Recent algorithms including transformers attention models and ELMo In TensorFlow in Action you'll dig into the newest version of Google's amazing TensorFlow framework as you learn to create incredible deep learning applications Author Thushan

Ganegedara uses quirky stories practical examples and behind the scenes explanations to demystify concepts otherwise trapped in dense academic papers As you dive into modern deep learning techniques like transformer and attention models you ll benefit from the unique insights of a top StackOverflow contributor for deep learning and NLP About the technology Google s TensorFlow framework sits at the heart of modern deep learning Boasting practical features like multi GPU support network data visualization and easy production pipelines using TensorFlow Extended TFX TensorFlow provides the most efficient path to professional AI applications And the Keras library fully integrated into TensorFlow 2 makes it a snap to build and train even complex models for vision language and more About the book TensorFlow in Action teaches you to construct train and deploy deep learning models using TensorFlow 2 In this practical tutorial you ll build reusable skill hands on as you create production ready applications such as a French to English translator and a neural network that can write fiction You ll appreciate the in depth explanations that go from DL basics to advanced applications in NLP image processing and MLOps complete with important details that you ll return to reference over and over What s inside Covers TensorFlow 2 9 Recent algorithms including transformers attention models and EIMo Build on pretrained models Writing end to end data pipelines with TFX About the reader For Python programmers with basic deep learning skills About the author Thushan Ganegedara is a senior ML engineer at Canva and TensorFlow expert He holds a PhD in machine learning from the University of Sydney

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[Deep Learning with TensorFlow 2 and Keras](#) Antonio Gulli,Amita Kapoor,Sujit Pal,2019-12-27 Build machine and deep learning systems with the newly released TensorFlow 2 and Keras for the lab production and mobile devices Key FeaturesIntroduces and then uses TensorFlow 2 and Keras right from the startTeaches key machine and deep learning techniquesUnderstand the fundamentals of deep learning and machine learning through clear explanations and extensive code samplesBook Description Deep Learning with TensorFlow 2 and Keras Second Edition teaches neural networks and deep learning techniques alongside TensorFlow TF and Keras You ll learn how to write deep learning applications in the most powerful popular and scalable machine learning stack available TensorFlow is the machine learning library of choice for professional applications while Keras offers a simple and powerful Python API for accessing TensorFlow TensorFlow 2 provides full Keras integration making advanced machine learning easier

and more convenient than ever before This book also introduces neural networks with TensorFlow runs through the main applications regression ConvNets CNNs GANs RNNs NLP covers two working example apps and then dives into TF in production TF mobile and using TensorFlow with AutoML What you will learn Build machine learning and deep learning systems with TensorFlow 2 and the Keras API Use Regression analysis the most popular approach to machine learning Understand ConvNets convolutional neural networks and how they are essential for deep learning systems such as image classifiers Use GANs generative adversarial networks to create new data that fits with existing patterns Discover RNNs recurrent neural networks that can process sequences of input intelligently using one part of a sequence to correctly interpret another Apply deep learning to natural human language and interpret natural language texts to produce an appropriate response Train your models on the cloud and put TF to work in real environments Explore how Google tools can automate simple ML workflows without the need for complex modeling Who this book is for This book is for Python developers and data scientists who want to build machine learning and deep learning systems with TensorFlow This book gives you the theory and practice required to use Keras TensorFlow 2 and AutoML to build machine learning systems Some knowledge of machine learning is expected

Word Embeddings: Reliability & Semantic Change Johannes Hellrich, 2019-08-15 Word embeddings are a form of distributional semantics increasingly popular for investigating lexical semantic change However typical training algorithms are probabilistic limiting their reliability and the reproducibility of studies Johannes Hellrich investigated this problem both empirically and theoretically and found some variants of SVD based algorithms to be unaffected Furthermore he created the JeSemE website to make word embedding based diachronic research more accessible It provides information on changes in word denotation and emotional connotation in five diachronic corpora Finally the author conducted two case studies on the applicability of these methods by investigating the historical understanding of electricity as well as words connected to Romanticism They showed the high potential of distributional semantics for further applications in the digital humanities

Learn TensorFlow in 24 Hours Alex Nordeen, 2020-10-31 Tensorflow is the most popular Deep Learning Library out there It has fantastic graph computations feature which helps data scientist to visualize his designed neural network using TensorBoard This Machine learning library supports both Convolution as well as Recurrent Neural network It supports parallel processing on CPU as well as GPU Prominent machine learning algorithms supported by TensorFlow are Deep Learning Classification wibe deep Boston Tree amongst others The book is very hands on and gives you industry ready deep learnings practices Here is what is covered in the book Table Of Content Chapter 1 What is Deep learning Chapter 2 Machine Learning vs Deep Learning Chapter 3 What is TensorFlow Chapter 4 Comparison of Deep Learning Libraries Chapter 5 How to Download and Install TensorFlow Windows and Mac Chapter 6 Jupyter Notebook Tutorial Chapter 7 Tensorflow on AWS Chapter 8 TensorFlow Basics Tensor Shape Type Graph Sessions Operators Chapter 9 Tensorboard Graph Visualization with Example Chapter 10 NumPy Chapter 11 Pandas Chapter

12 Scikit Learn Chapter 13 Linear Regression Chapter 14 Linear Regression Case Study Chapter 15 Linear Classifier in TensorFlow Chapter 16 Kernel Methods Chapter 17 TensorFlow ANN Artificial Neural Network Chapter 18 ConvNet Convolutional Neural Network TensorFlow Image Classification Chapter 19 Autoencoder with TensorFlow Chapter 20 RNN Recurrent Neural Network TensorFlow [Deep Learning Architectures and Applications](#) Antonio Gulli,2018 This video course presents deep learning architectures coded in Python using Keras a modular neural network library that runs on top of either Google s TensorFlow or Lisa Lab s Theano backends This video course introduces Generative Adversarial Networks GANs that are used to reproduce synthetic data that looks like data generated by humans and then teach how to forge the MNIST and CIFAR 10 dataset with the help of Keras Adversarial GANs Practical applications include code for predicting the surrounding words given the current word sentiment analysis and synthetic generation of texts We will learn about a specific form of word embedding word2vec This embedding has proven more effective and has been widely adopted in the deep learning and NLP communities We will also learn different ways in which you can generate your own embeddings in your Keras code By the end of this video course you will be able to transform words in text into vector embeddings that retain the distributional semantics of the word Resource description page [Deep Learning](#) Stephane Tuffery,2022-11-22 DEEP LEARNING A concise and practical exploration of key topics and applications in data science In *Deep Learning From Big Data to Artificial Intelligence with R* expert researcher Dr St phane Tuff ry delivers an insightful discussion of the applications of deep learning and big data that focuses on practical instructions on various software tools and deep learning methods relying on three major libraries MXNet PyTorch and Keras TensorFlow In the book numerous up to date examples are combined with key topics relevant to modern data scientists including processing optimization neural network applications natural language processing and image recognition This is a thoroughly revised and updated edition of a book originally released in French with new examples and methods included throughout Classroom tested and intuitively organized *Deep Learning From Big Data to Artificial Intelligence with R* offers complimentary access to a companion website that provides R and Python source code for the examples offered in the book Readers will also find A thorough introduction to practical deep learning techniques with explanations and examples for various programming libraries Comprehensive explorations of a variety of applications for deep learning including image recognition and natural language processing Discussions of the theory of deep learning neural networks and artificial intelligence linked to concrete techniques and strategies commonly used to solve real world problems Perfect for graduate students studying data science big data deep learning and artificial intelligence *Deep Learning From Big Data to Artificial Intelligence with R* will also earn a place in the libraries of data science researchers and practicing data scientists [Applied Neural Networks with TensorFlow 2](#) Orhan Gazi Yalçın,2021 Implement deep learning applications using TensorFlow while learning the why through in depth conceptual explanations You ll start by learning what deep learning offers over other machine learning models Then

familiarize yourself with several technologies used to create deep learning models While some of these technologies are complementary such as Pandas Scikit Learn and Numpy others are competitors such as PyTorch Caffe and Theano This book clarifies the positions of deep learning and Tensorflow among their peers You ll then work on supervised deep learning models to gain applied experience with the technology A single layer of multiple perceptrons will be used to build a shallow neural network before turning it into a deep neural network After showing the structure of the ANNs a real life application will be created with Tensorflow 2 0 Keras API Next you ll work on data augmentation and batch normalization methods Then the Fashion MNIST dataset will be used to train a CNN CIFAR10 and Imagenet pre trained models will be loaded to create already advanced CNNs Finally move into theoretical applications and unsupervised learning with auto encoders and reinforcement learning with tf agent models With this book you ll delve into applied deep learning practical functions and build a wealth of knowledge about how to use TensorFlow effectively You will Compare competing technologies and see why TensorFlow is more popular Generate text image or sound with GANs Predict the rating or preference a user will give to an item Sequence data with recurrent neural networks

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