

applied-ml

Curated papers, articles, and blogs on **data science & machine learning in production**. ☒

contributions welcome summaries in tweets hits 83102

Figuring out how to implement your ML project? Learn how other organizations did it:

- **How** the problem is framed 🔍 (e.g., personalization as recsys vs. search vs. sequences)
- **What** machine learning techniques worked ✔ (and sometimes, what didn't ✖)
- **Why** it works, the science behind it with research, literature, and references 📖
- **What** real-world results were achieved (so you can better assess ROI 🕒💰📈)

P.S., Want a summary of ML advancements? 🔗 [ml-surveys](#)

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4. [Meet Hodor – Gojek’s Upstream Data Quality Tool](#) Gojek
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Facebook

Data Engineering

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Data Discovery

1. [Amundsen – Lyft’s Data Discovery & Metadata Engine](#) Lyft
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13. [How We're Solving Data Discovery Challenges at Shopify](#) Shopify
14. [Nemo: Data discovery at Facebook](#) Facebook
15. [Apache Atlas: Data Governance and Metadata Framework for Hadoop \(Code\)](#) Apache
16. [Collect, Aggregate, and Visualize a Data Ecosystem's Metadata \(Code\)](#) WeWork

Feature Stores

1. [Introducing Feast: an open source feature store for machine learning \(Code\)](#) Gojek
2. [Feast: Bridging ML Models and Data](#) Gojek
3. [Building a Scalable ML Feature Store with Redis, Binary Serialization, and Compression](#) DoorDash
4. [Michelangelo Palette: A Feature Engineering Platform at Uber](#) Uber
5. [Distributed Time Travel for Feature Generation](#) Netflix
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Classification

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2. [Chimera: Large-scale Classification using Machine Learning, Rules, and Crowdsourcing \(Paper\)](#)
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9. [Teaching Machines to Triage Firefox Bugs](#) Mozilla
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11. [Using ML to Subtype Patients Receiving Digital Mental Health Interventions \(Paper\)](#) Microsoft
12. [Prediction of Advertiser Churn for Google AdWords \(Paper\)](#) Google
13. [Scalable Data Classification for Security and Privacy \(Paper\)](#) Facebook

Regression

1. [Using Machine Learning to Predict Value of Homes On Airbnb](#) Airbnb
2. [Using Machine Learning to Predict the Value of Ad Requests](#) Twitter
3. [Open-Sourcing Riskquant, a Library for Quantifying Risk \(Code\)](#) NetFlix

Forecasting

1. [Forecasting at Uber: An Introduction](#) Uber
2. [Engineering Extreme Event Forecasting at Uber with RNN](#) Uber
3. [Transforming Financial Forecasting with Data Science and Machine Learning at Uber](#) Uber
4. [Under the Hood of Gojek's Automated Forecasting Tool](#) GoJek
5. [BusTr: Predicting Bus Travel Times from Real-Time Traffic \(Paper, Video\)](#) Google
6. [Retraining Machine Learning Models in the Wake of COVID-19](#) DoorDash
7. [Automatic Forecasting using Prophet, Databricks, Delta Lake and MLflow \(Paper, Code\)](#) Atlassian

Recommendation

1. [Amazon.com Recommendations: Item-to-Item Collaborative Filtering \(Paper\)](#) Amazon
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Amazon
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27. [Explore, Exploit, and Explain: Personalizing Explainable Recommendations with Bandits \(Paper\)](#)
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28. [Contextual and Sequential User Embeddings for Large-Scale Music Recommendation \(Paper\)](#)
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35. [Learning to be Relevant: Evolution of a Course Recommendation System \(**PAPER NEEDED**\)](#) LinkedIn
36. [Building a Heterogeneous Social Network Recommendation System](#) LinkedIn
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38. [A Meta-Learning Perspective on Cold-Start Recommendations for Items \(Paper\)](#) Twitter
39. [Zero-Shot Heterogeneous Transfer Learning from RecSys to Cold-Start Search Retrieval \(Paper\)](#)
Google
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Google
41. [Personalized Channel Recommendations in Slack](#) Slack
42. [Deep Retrieval: End-to-End Learnable Structure Model for Large-Scale Recommendations \(Paper\)](#)
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47. [How we use AutoML, Multi-task learning and Multi-tower models for Pinterest Ads](#) [Pinterest](#)

Search & Ranking

1. [Amazon Search: The Joy of Ranking Products \(Paper, Video, Code\)](#) [Amazon](#)
2. [Why Do People Buy Seemingly Irrelevant Items in Voice Product Search? \(Paper\)](#) [Amazon](#)
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24. [COLD: Towards the Next Generation of Pre-Ranking System \(Paper\)](#) [Alibaba](#)

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28. [Bringing Personalized Search to Etsy](#) Etsy
29. [Building a Better Search Engine for Semantic Scholar](#) Allen Institute for AI

Embeddings

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22. [GeDi: A Powerful New Method for Controlling Language Models \(Paper, Code\)](#) Salesforce
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Sequence Modelling

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Computer Vision

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Reinforcement Learning

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Anomaly Detection

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12. [Fighting fraud with Triplet Loss](#) OLX Group
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Graph

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4. [AliGraph: A Comprehensive Graph Neural Network Platform \(Paper\)](#) Alibaba
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Optimization

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6. [Think out of the package: Recommending package types for e-commerce shipments \(Paper\)](#)
Amazon

Information Extraction

1. [Unsupervised Extraction of Attributes and Their Values from Product Description \(Paper\)](#) Rakuten
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Weak Supervision

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2. [Osprey: Weak Supervision of Imbalanced Extraction Problems without Code \(Paper\)](#) Intel
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4. [Bootstrapping Conversational Agents with Weak Supervision \(Paper\)](#) IBM

Generation

1. [Better Language Models and Their Implications \(Paper\)](#) OpenAI
2. [Language Models are Few-Shot Learners \(Paper\) \(GPT-3 Blog post\)](#) OpenAI
3. [Image GPT \(Paper, Code\)](#) OpenAI
4. [Deep Learned Super Resolution for Feature Film Production \(Paper\)](#) Pixar
5. [Unit Test Case Generation with Transformers](#) Microsoft

Audio

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18. [Overlapping Experiment Infrastructure: More, Better, Faster Experimentation \(Paper\)](#) Google

Model Management

1. [Runway - Model Lifecycle Management at Netflix](#) Netflix

Efficiency

1. [GrokNet: Unified Computer Vision Model Trunk and Embeddings For Commerce \(Paper\)](#) Facebook
2. [Permute, Quantize, and Fine-tune: Efficient Compression of Neural Networks \(Paper\)](#) Uber

Ethics

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2. [LiFT: A Scalable Framework for Measuring Fairness in ML Applications \(Paper\)](#) LinkedIn

Practices

1. [Practical Recommendations for Gradient-Based Training of Deep Architectures \(Paper\)](#) Yoshua Bengio
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Team structure

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2. [Beware the Data Science Pin Factory: The Power of the Full-Stack Data Science Generalist](#) Stitch Fix
3. [Cultivating Algorithms: How We Grow Data Science at Stitch Fix](#) StitchFix
4. [Analytics at Netflix: Who We Are and What We Do](#) Netflix

Fails

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2. [When It Comes to Gorillas, Google Photos Remains Blind](#) Google
3. [An Algorithm That 'Predicts' Criminality Based on a Face Sparks a Furor](#) Harrisburg University
4. [It's Hard to Generate Neural Text From GPT-3 About Muslims](#) OpenAI
5. [A British AI Tool to Predict Violent Crime Is Too Flawed to Use](#) United Kingdom
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