

## AI journalism Starter Pack

Welcome to the AI journalism Starter Pack, a guide designed to help news organisations learn about the opportunities offered by artificial intelligence (AI) to support their journalism. This guide will be of use to any news organisation approaching AI technologies but it is especially targeted at small and local publishers.

We are the [JournalismAI](#) team at [Polis](#) – the journalism think-tank at the London School of Economics and Political Science ([LSE](#)) – and this *Starter Pack* – created with the support of the [Google News Initiative](#) – sums up what we think you should know if you are wondering if and how AI can help your news organisation.

The *Starter Pack* is designed as a collection of resources – articles, case studies, online courses, tools, and more – organised in answers to the questions we most often receive from news organisations we have the opportunity to engage with through JournalismAI. We hope this guide will help your news organisation decide if and how to embrace *AI journalism* to make your work more efficient and serve your audiences better.

You can explore the *Starter Pack* in its entirety, as if you were reading a book, or jump straight to the questions that most apply to your needs, by using the **MENU** on the next page. The *Starter Pack* is designed to be shared: copy-paste the link or download it as a PDF and share it with your colleagues and others in your network.

We welcome your feedback on how we can improve the *Starter Pack*. Email your suggestions to [hello@journalismai.info](mailto:hello@journalismai.info). We look forward to hearing from you!

*The JournalismAI team*

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## What do we mean by ‘artificial intelligence’?

Artificial intelligence means different things to different people.

It is generally defined as *“a collection of ideas, technologies, and techniques that relate to a computer system’s capacity to perform tasks normally requiring human intelligence.”*

At JournalismAI, we use ‘artificial intelligence’ as an umbrella term to refer to the use of algorithms and automation by news organisations, usually to make journalists’ work more efficient or to deliver more relevant content to audiences.

### Want to know more?

Go to [‘Elements of AI’](#), a free online course developed by Reaktor and the University of Helsinki to demystify AI. Although not focused on journalism, the course offers an excellent introduction to AI in chapters [One](#) and [Two](#).

## And what is ‘machine learning’ instead?

The concepts of AI and machine learning often seem to be used interchangeably, but in fact it is more correct to consider machine learning as a subfield of AI.

In simple terms, what machine learning does is using data to answer questions. More formally, it refers to “the use of algorithms that learn patterns from data and are able to perform tasks without being explicitly programmed to do so.”

Moreover, a defining feature of machine learning systems is that they improve their performance with experience and data. Or in other words: they learn.

### Want to know more?

Take our free online course: [‘Introduction to Machine Learning’](#). Through examples of journalistic applications, this course will help you understand what machine learning is, how it works, and how you can use it in your reporting. Start with lessons [Two](#) and [Three](#) for a quick intro – fifteen minutes in total.

## How do news organisations use AI technologies?

AI technologies are used in journalism across the newsmaking process – from news gathering to news production and news distribution. In the next sections of this Starter Pack, you will find a series of case studies that show how AI is used by news organisations to achieve a number of different goals.

### Want to know more?

Read ‘Chapter 1: How AI is Being Used in Journalism Today’ of our 2019 report: [‘New Powers, New Responsibilities’](#).

### 10 ways to use AI in journalism

The next ten pages of the Starter Pack will focus on some of the most common use cases of AI in journalism. All the examples are taken from the [JournalismAI Case Studies Database](#), which contains 100+ examples of news organisations worldwide making use of AI technologies.

Find the use case that is most relevant to you, jump straight to that, and see what you can learn from others who used AI to address the same challenge:

[1. Using AI to automate your news production](#)

[2. Using AI for your journalistic investigations](#)

[3. Using AI to leverage the content in your archives](#)

[4. Using AI to understand what your audiences want](#)

[5. Using AI to optimise engagement and subscriptions](#)

[6. Using AI for fact-checking and verification](#)

[7. Using AI for comment moderation](#)

[8. Using AI to optimise your use of images](#)

[9. Using AI to identify and mitigate risks of bias](#)

[10. Using AI to cover the COVID-19 pandemic](#)

## 1. Using AI to automate your news production

[2020, Associated Press, Newsday]

[What the AP and Newsday learned from automating coverage of 124 school districts](#)

[2019, BBC News]

[Stories by numbers: How BBC News is experimenting with semi-automated journalism](#)

[2018, Press Association UK]

[Press Association's news service RADAR has written 50,000 individual local news stories in three months with AI technology](#)

[2017, The Washington Post]

[The Washington Post's robot reporter has published 850 articles in the past year](#)

### Want to know more?

Read this CJR article on '[Boosting local news with data journalism and automation](#)' to find out about the [RADAR](#) (Reporters And Data And Robots) project, which uses AI tools to dynamically create high quality content at scale.

## 2. Using AI for your journalistic investigations

[2020, Ojo Público]

[Calculating corruption: Peru's Ojo Público creates tool to gauge contracting risks](#)

[2019, Quartz]

[How Quartz used AI to help reporters search the Mauritius Leaks](#)

[2019, International Consortium of Investigative Journalists]

[We cracked the Panama Papers with 400 human brains. Can AI help us next time?](#)

[2019, Artificial Informer]

[Dissecting a machine learning powered investigation](#)



### Want to know more?

Take our free online course: '[Hands-on Machine Learning](#)'. You will learn how to train a machine learning model to identify and classify images in vast datasets – like the Ukrainian data journalism agency [Texty](#) did in the investigation '[Leprosy of the Land](#)'.



### Tired of reading?

You can watch the presentations about '[Pinpoint: a new AI-driven search tool for journalists working on large document sets](#)' and '[How Ojo Público uses AI to investigate corruption](#)' from the 2020 JournalismAI Festival.

### 3. Using AI to leverage the content in your archives

[2020, Swedish Radio]

[Swedish Radio leverages Peach recommendations for content production](#)

[2020, South China Morning Post]

[Digitizing a century of history with data](#)

[2020, The New York Times]

[To find photos in our archive, we taught the CMS how to read](#)

#### Want to know more?

Read the report '[How AI will put the power of news media archives in the hands of the journalists](#)' by one of the 2020 JournalismAI Collab teams. The report includes a catalogue of solutions for news organisations that want to leverage the content in their archives.

#### Tired of reading?

You can [watch the presentation](#) given by the team behind the report on 'Can AI help us put the power of our archives in the hands of our journalists?' at the 2020 JournalismAI Festival.



## 4. Using AI to understand what your audiences want

[2021, Financial Times]

[Predicting FT trending topics](#)

[2019, The Times of London]

[How The Times of London increased digital subscribers 19% in a year](#)

[2018, Yle News]

[First in the world: Yle's smart news assistant Voitto ensures that you don't miss the news you want to read](#)

[2017, BBC]

[BBC will use machine learning to cater to what audiences want to watch](#)



### Tired of reading?

You can [watch the presentation](#) on 'How to understand and engage with your customers using AI & ML' given by the South China Morning Post at the 2020 JournalismAI Festival.

## 5. Using AI to optimise engagement & subscriptions

[2019, Piano]

[How Piano built a propensity paywall for publishers — and what it's learned so far](#)

[2018, NZZ]

[How Swiss news publisher NZZ built a flexible paywall using machine learning](#)

[2018, Schibsted]

[Not all news site visitors are created equal. Schibsted is trying to predict the ones who will pay up](#)

[2018, The Wall Street Journal]

[After years of testing, The Wall Street Journal has built a paywall that bends to the individual reader](#)



### Want to know more?

Read the report '[How can AI help build audience engagement and loyalty?](#)' by one of the 2020 JournalismAI Collab teams. The report includes four sections including the 'Loyalty Playbook', which details best practices and real-world applications where AI has helped develop deeper relationships with audiences and led to real successes.



### Tired of reading?

You can [watch the presentation](#) given by the team behind the report on 'How your newsroom might use AI to increase loyalty in your audiences' at the 2020 JournalismAI Festival.

## 6. Using AI for fact-checking and verification

[2020, Storyful]

[The new tool helping Asian newsrooms detect fake images](#)

[2020, The New York Times]

[Tool to help journalists spot doctored images is unveiled by Jigsaw](#)

[2019, Full Fact]

[How we use AI to help fact check party manifestos](#)

[2018, Chequeado]

[In Argentina, fact-checkers latest hire is a bot](#)



### Want to know more?

Check out Full Fact's work on '[Automated Fact Checking](#)'. If you want, you can sign up to use or test their automated fact checking software – as a fact-checking organisation or as an individual journalist.

## 7. Using AI for comment moderation

[2019, El País]

[How El País used AI to make their comments section less toxic](#)

[2018, The New York Times]

[Using AI to host better conversations](#)

[2017, The Washington Post]

[The Washington Post leverages artificial intelligence in comment moderation](#)



### Want to know more?

Read this brilliantly titled blog post by the New York Times Open Team – ‘[To Apply Machine Learning Responsibly, We Use It in Moderation](#)’ – for a deep dive into the ethical and editorial decisions involved in using machine learning for comment moderation, while making sure to mitigate bias and other risks.

[For more information on bias and ethical concerns about the use of AI, check the [dedicated section](#) of this Starter Pack.]

## 8. Using AI to optimise your use of images

[2021, Nine]

[Nine improves its image at scale with AI project](#)

[2019, BBC R&D]

[AI & auto colourisation - Black & White to Colour with machine learning](#)

[2018, Getty Images]

[Getty Images launches a new AI tool that helps publishers find the right picture for the story](#)



### Want to know more?

*“Advances in computer vision are giving us deeper insights into our surroundings than ever before. For journalists, they have the potential to unlock data that humans alone can't perceive and inform new types of reporting.” Read [this article](#) by the New York Times R&D team to get a glimpse on how computer vision is poised to provide journalists with new data and insights for their reporting.*

## 9. Using AI to identify and mitigate risks of bias

[2020, Schibsted]

[Identifying biases in the news](#)

[2020, The New York Times]

[Analyzing bias in Natural Language models](#)

[2018, Financial Times]

[Financial Times tool warns if articles quote too many men](#)



### Want to know more?

Explore the [AIJO project](#), a study on how we might leverage the power of AI to understand, identify and mitigate newsroom biases. The AIJO project is the result of the work of one of the 2020 JournalismAI Collab teams.



### Tired of reading?

You can [watch the presentation](#) given by the team behind the AIJO project at the 2020 JournalismAI Festival.

## 10. Using AI to cover the COVID-19 pandemic

[2021, Trib Total Media]

[COVID-19: USA's Trib Total Media boosts AI-backed hyperlocal journalism](#)

[2020, BBC]

[BBC launches pop-up Corona Bot service to answer questions on Covid-19 related changes](#)

[2020, KPCC]

[How KPCC embraced its role as LA's help desk—and what we've learned along the way](#)

[2020, Aftonbladet]

[Swedish Aftonbladet uses automation to outpace competitors with its covid-19 news coverage](#)



### Want to know more?

Read our interview with Chris Collins, Senior Executive Editor at Bloomberg News, on [‘The ultimate data story: Driving a global newsroom with AI during the COVID crisis’](#).

## How are newsrooms introducing AI in their workflows?

There are as many different answers to this question as there are newsrooms. There is no one way to introduce AI. You need to find the way that works for your organisation, its culture and needs. But surely it helps to get inspiration from the experts. Here are four examples from Canada, the US, Sweden, and the UK:

[2021, BBC News Labs]

[BBC News Labs is building the tools to semi-automate journalism](#)

[2020, Swedish Radio]

[An algorithm for empowering public service news](#)

[2020, The Globe and Mail]

[How an AI system is boosting business at The Globe and Mail](#)

[2019, The Wall Street Journal]

[How The Wall Street Journal is building an incubator into its newsroom, with new departments and plenty of hires](#)



### Want to know more?

Read the five tips shared by newsroom leaders from the JournalismAI community on '[How to manage AI workflows in news organisations](#)'.



### Tired of reading?

You can watch the conversation on '[How AI is becoming an integral part of the news-making process](#)' – with speakers from Bloomberg, AP, and the Financial Times – and the presentation by the AI + Automation Lab team at Bayerischer Rundfunk on '[Interdisciplinary teams working on AI projects](#)' from the 2020 JournalismAI Festival.



## How is AI changing newsroom roles and careers?

As with every new technology before, from the printing press to the internet, AI is not only changing how journalism is produced but also the roles and profiles of the people who work in newsrooms. Some tasks are automated and the need for new skills is emerging.

Go to our blog to meet [seven women who work at the intersection of journalism and technology](#), and whose experience working with AI in the newsroom can tell us a lot about how the profession is and will continue to evolve:

**Christina Elmer, Technischen Universität Dortmund, until recently at Der Spiegel:**

[Building better human-AI interfaces for journalism](#)

**Alyssa Ziesler, The Wall Street Journal:**

[Creating a pipeline for emerging technology in the newsroom](#)

**Agnes Stenbom, Schibsted & KTH Royal Institute of Technology:**

[How new ways of working can transform careers and newsrooms](#)

**Uli Köppen, Bayerischer Rundfunk:**

[Investing in unicorns: how to adapt your newsroom to AI](#)

**Anna Vissens, The Guardian:**

[The science of data in action: changing our lives and our journalism](#)

**Viktoriia Samatova, Reuters:**

[How a global news innovator uses AI](#)

**Emilia Díaz-Struck, the International Consortium of Investigative Journalists:**

[The impact of AI and collaboration on investigative journalism](#)



### Tired of reading?

You can watch the conversation on [‘A journalism career with AI or an AI career in journalism?’](#) – with speakers from Reuters, The Guardian, and The Wall Street Journal Times – from the 2020 JournalismAI Festival.

## What about the ethical concerns of using AI?

AI is a powerful technology but there are also risks associated with it. For journalists, it's important to know what can go wrong with AI and what safety nets we can and should design to mitigate the risks. The AI + Automation Lab at Bayerischer Rundfunk published a set of [‘AI Ethics Guidelines’](#) that offer a glimpse into the complexity of such a multi-layered topic.

You can also read [‘An ethical checklist for robot journalism’](#) – although at JournalismAI we avoid using the misleading expression ‘robot journalism’ – by the former Standards Editor of the Associated Press.

### Want to know more?

Read ‘Chapter 3: Ethics and Editorial Policy’ of our 2019 report: [‘New Powers, New Responsibilities’](#). And if you want to step outside journalism to learn how AI can negatively impact our societies if it's not used responsibly, don't miss the book [‘Artificial Unintelligence: How Computers Misunderstand the World’](#), by NYU Professor Meredith Broussard.

## Are there collaboration opportunities around AI?

It is no secret that at JournalismAI we believe in collaboration. Why would we have embarked on the mad endeavour of coordinating the work of 20+ news organisations from five different continents, for two [consecutive years](#), if we didn't?

But what does collaboration look like when it comes to journalists from different outlets exploring together the potential of artificial intelligence? '[Can newsrooms join forces to unlock the power of AI?](#)', by JournalismAI director Charlie Beckett, has some answers. And if you want to hear directly from the people who have been collaborating with us...

[2020, JournalismAI Collab]

[Collaboration as the key to discovering new ways to connect content and users](#)

[2020, JournalismAI Collab]

[Crossing boundaries together to tackle journalism biases](#)



### Want to know more?

Read the sections on 'Newsroom collaboration' and 'Collaboration with universities' in 'Chapter 4: The Future of AI and Journalism' of our 2019 report: '[New Powers, New Responsibilities](#)'.



### Tired of reading?

You can watch the conversation on '[What we have learned from helping newsrooms to work together on developing innovative AI-powered solutions](#)' – with the expert coaches of the 2020 JournalismAI Collab – from the 2020 JournalismAI Festival.

## Can small and local newsrooms adopt AI?

The short answer is: Yes. But it's not easy.

If there is something we learned from the [participants](#) of our [AI Academy for Small Newsrooms](#), it's that if you are a small or local news organisation, the limitations in terms of resources, skills, and available data are real. But not insurmountable if you keep the focus on the journalistic needs you want to address and know where to look for [available tools](#), [examples and inspiration](#). And that's exactly what this Starter Pack hopes to help with.

### Want to know more?

*Read our investigation into '[Democratising AI for all Newsrooms](#)' to learn about the main challenges that small news organisations face in adopting AI from the examples of three organisations that are trying to do just that in Mexico, Lebanon, and Hong Kong. And for some practical advice, read: '[AI Strategy 101: How small newsrooms can embrace a data-driven culture](#)'.*

### Tired of reading?

*You can watch the presentation on '[How journalists can use machine learning to enhance their reporting](#)' from the 2020 JournalismAI Festival, to find out why, to quote one of the speakers, "For small and mid-sized newsrooms, machine learning can be the ultimate force multiplier".*

## I want to build an AI strategy for my own organisation.

### Where do I start?

In 2019, we published a [list of recommendations](#) that newsrooms should consider when approaching artificial intelligence for the first time. Start there, and then read '[How to create an AI strategy for your newsroom](#)', a collection of tips from newsroom leaders who have first-hand experience in doing just that: building an AI strategy for their own organisation.

Feeling bold? Why not follow the lead of openDemocracy and work on your AI strategy in an open and collaborative way? Their '[AI strategic action plan](#)' is on GitHub and here they explain '[Why we are open-sourcing our AI strategy](#)'.

### Want to know more?

Read 'Chapter 2: AI Strategy' of our 2019 report, '[New Powers, New Responsibilities](#)', and '[How to make your newsroom AI-ready](#)', a useful guide by Tom Van de Weghe, on creating a roadmap from your news organisation – with some overlap with our recommendations and some additional useful insights.

## I have colleagues who know nothing about AI.

### Where do I send them first?

We know that journalists are busy, and there is always so much to learn and stay informed about. To the point that even going through this starter pack can be too much if one hasn't come across the topic of AI journalism before.

So if we had to recommend one single place to start with for an intensive but efficient 45-minute deep-dive: Our free online course, '[Introduction to Machine Learning](#)' (and AI), is the answer.

And if your colleagues want a monthly update on everything that is happening in the world of AI journalism, you should really tell them to [sign up for the JournalismAI newsletter](#) :)

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## This is so cool. Now I want to dive deeper.

### Any books you'd recommend?

Sure thing!

The two books you shouldn't miss about the use of AI in journalism are:

[Automating the News. How Algorithms Are Rewriting the Media](#)

By Nick Diakopoulos (2019), Harvard University Press

[Newsmakers Artificial Intelligence and the Future of Journalism](#)

By Francesco Marconi (2020), Columbia University Press

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**Double-click to go back to the Menu**

## **Appendix: Examples of AI solutions for journalism**

What follows is a list of AI-powered tools and solutions for journalism that were recommended by experts in our network throughout programmes like the [JournalismAI Collab Challenges](#) and the [AI Academy for Small Newsrooms](#).

The JournalismAI team does not endorse these tools, and their inclusion in the list serves only to exemplify what kind of AI-powered solutions are available off-the-shelf for journalists and news organisations. They are presented below with the descriptions available on their own websites.

This Starter Pack is a living document. We welcome any suggestions that may help us expand this list of solutions. You can email us at [hello@journalismai.info](mailto:hello@journalismai.info).

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### **Natural Language Generation:**

- [Narrativa](#): “Gabriele, our machine learning-based artificial intelligence platform builds and deploys natural language solutions to automate content, optimize processes and take your business to the next level.”
- [RADAR](#): “Using the latest AI tools to dynamically create high quality content at massive scale.”
- [Wordsmith, by Automated Insights](#): “Wordsmith is a natural language generation platform that transforms your data into insightful narrative.”

### **Text-to-Speech:**

- [Amazon Polly](#): “Amazon Polly is a service that turns text into lifelike speech, allowing you to create applications that talk, and build entirely new categories of speech-enabled products.”
- [Google Cloud Text-to-Speech](#): “Convert text into natural-sounding speech using an API powered by Google’s AI technologies.”

## Speech-to-Text:

- [Google Cloud Speech-to-Text](#): “Accurately convert speech into text using an API powered by Google’s AI technologies.”
- [Trint](#): “Turn audio and video into searchable, editable and shareable content in up to 31 languages.”

## Data analysis & extraction:

- [Amazon Textract](#): “Automatically extract printed text, handwriting, and data from any document.”
- [Pinpoint, by Google Journalist Studio](#): “Pinpoint is a research tool that helps you explore and analyze large collections of documents.”
- [Tabula](#): “Tabula is a tool for liberating data tables locked inside PDF files.”

## Data cleaning:

- [Dedupe.io](#): “Dedupe.io is a powerful tool that learns the best way to find similar rows in your data.”
- [OpenRefine](#): “OpenRefine is a powerful tool for working with messy data: cleaning it; transforming it from one format into another; and extending it with web services and external data.”

## Text summarisation:

- [Agolo](#): “Agolo systematically reads, organizes, and synthesizes news and other textual information, generating configurable and easily shareable summaries.”
- *For more summarisation options, check out the “[Unexhaustive list of AI-powered summarisation tools](#)” compiled by one of the 2020 JournalismAI Collab teams.*

## Fact-checking:

- [Google Fact Check Tools](#): “The Fact Check Tools consist of two tools: Fact Check Explorer and Fact Check Markup Tool. Both tools aim to facilitate the work of fact-checkers, journalists and researchers.”



## Personalisation & recommendations:

- [Amazon Personalize](#): “Create real-time personalized user experiences faster at scale.”
- [CRUX](#): “CRUX’s Knowledge quantification technology is A product that creates a positive feedback loop around content consumption. The quantified knowledge experience increases user engagement, retention and conversion while showcasing the very best content.”
- [Google Cloud Recommendations AI](#): “Deliver highly personalized product recommendations at scale.”

## Subscriptions & dynamic paywalls:

- [Piano](#): “We help media companies build dedicated audiences and increase revenues.”
- [Sophi](#): “Automation and Predictive Paywalls for Modern Publishers.”

## Other AI-powered solutions:

- [ETX Studio](#): “From consulting to the creation of custom content to our 100% audio augmented content platform, we can help you with all of your needs for Editorial Transformative Experiences.”
- [GitHub Copilot](#): “Your AI pair programmer. With GitHub Copilot, get suggestions for whole lines or entire functions right inside your editor.”
- [Google Cloud AutoML](#): “Train high-quality custom machine learning models with minimal effort and machine learning expertise.”
- [IKVA](#): “Discover and transform data into business insights.”
- [Prodigy](#): “Prodigy is a scriptable annotation tool so efficient that data scientists can do the annotation themselves, enabling a new level of rapid iteration.”
- [Samdesk](#): “Samdesk is a global disruption monitoring platform powered by big data and artificial intelligence. We help you protect your people, assets, and brand with real-time crisis alerts.”

## Closing Notes

The editorial responsibility for the content of this Starter Pack lies with the JournalismAI team at Polis, the journalism think-tank at the London School of Economics and Political Science.

A special thanks to the participants and instructors of the [2021 AI Academy for Small Newsrooms](#), whose insights guided the creation of this Starter Pack.

We welcome your feedback on how to improve the Starter Pack. Please address any comments or questions to [hello@journalismai.info](mailto:hello@journalismai.info)

All JournalismAI activities are possible thanks to the support of the [Google News Initiative](#).

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## Get involved

Find out more about JournalismAI on the [project's website](#) and [sign up](#) for the newsletter to receive all the news about JournalismAI's activities, opportunities, and the latest developments in journalism and artificial intelligence.

Follow [@PolisLSE](#) on Twitter for daily JournalismAI updates and join the global JournalismAI community [on Telegram](#).

