

# Responsible AI: Applying AI Principles with Google Cloud

Find links to the resources and further reading mentioned in the training.

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## Module 1: Introduction

Google Cloud: Responsible AI  
[cloud.google.com/responsible-ai](https://cloud.google.com/responsible-ai)

Google Cloud: Building responsible AI for everyone  
[ai.google/responsibilities](https://ai.google/responsibilities)

Google's AI Principles  
[ai.google/principles/](https://ai.google/principles/)

Blog: AI at Google: our principles  
[blog.google/technology/ai/ai-principles/](https://blog.google/technology/ai/ai-principles/)

Stanford University – Artificial Intelligence Index Report 2019  
[hai.stanford.edu/sites/default/files/ai\\_index\\_2019\\_report.pdf](https://hai.stanford.edu/sites/default/files/ai_index_2019_report.pdf)

ZME Science: AI is outpacing Moore's Law  
[zmescience.com/science/ai-is-outpacing-moores-law](https://zmescience.com/science/ai-is-outpacing-moores-law)

Quartz: The data that transformed AI research—and possibly the world  
[qz.com/1034972/the-data-that-changed-the-direction-of-ai-research-and-possibly-the-world/](https://qz.com/1034972/the-data-that-changed-the-direction-of-ai-research-and-possibly-the-world/)

Google Research, 2022 & beyond: Responsible AI  
<https://ai.googleblog.com/2023/01/google-research-2022-beyond-responsible.html>

Responsible AI at Google Research: PAIR

<https://ai.googleblog.com/2023/05/responsible-ai-at-google-research-pair.html>

Responsible AI at Google Research: Technology, AI, Society and Culture

<https://ai.googleblog.com/2023/04/responsible-ai-at-google-research.html>

Responsible AI at Google Research: The Impact Lab

<https://ai.googleblog.com/2023/03/responsible-ai-at-google-research.html>

## Module 2: The business case for responsible AI

Economist Intelligence Unit (EIU) key findings: Staying Ahead of the Curve: The Business Case for Responsible AI

[eiu.com/n/staying-ahead-of-the-curve-the-business-case-for-responsible-ai/](https://eiu.com/n/staying-ahead-of-the-curve-the-business-case-for-responsible-ai/)

Economist Intelligence Unit (EIU) full report: Staying Ahead of the Curve: The Business Case for Responsible AI

[pages.eiu.com/rs/753-RIQ-438/images/EIUStayingAheadOfTheCurve.pdf](https://pages.eiu.com/rs/753-RIQ-438/images/EIUStayingAheadOfTheCurve.pdf)

Capgemini Research Institute report: AI and the Ethical Conundrum

[capgemini.com/research/ai-and-the-ethical-conundrum/](https://capgemini.com/research/ai-and-the-ethical-conundrum/)

Capgemini Research Institute full report: AI and the Ethical Conundrum

[capgemini.com/wp-content/uploads/2020/10/AI-and-the-Ethical-Conundrum-Report.pdf](https://capgemini.com/wp-content/uploads/2020/10/AI-and-the-Ethical-Conundrum-Report.pdf)

## Module 3: AI's technical considerations and ethical concerns

E&T: Building digital trust will be essential to adoption of AI tools

[eandt.theiet.org/content/articles/2020/11/building-digital-trust-will-be-essential-to-adoption-of-ai-tools/](https://eandt.theiet.org/content/articles/2020/11/building-digital-trust-will-be-essential-to-adoption-of-ai-tools/)

The Harvard gazette: Ethical concerns mount as AI takes bigger decision-making role in more industries

[news.harvard.edu/gazette/story/2020/10/ethical-concerns-mount-as-ai-takes-bigger-decision-making-role/](https://news.harvard.edu/gazette/story/2020/10/ethical-concerns-mount-as-ai-takes-bigger-decision-making-role/)

Venturebeat: Responsible AI becomes critical in 2021

[venturebeat.com/2020/11/11/responsible-ai-becomes-critical-in-2021/](https://venturebeat.com/2020/11/11/responsible-ai-becomes-critical-in-2021/)

Capgemini Research Institute full report: AI and the Ethical Conundrum

[capgemini.com/wp-content/uploads/2020/10/AI-and-the-Ethical-Conundrum-Report.pdf](https://capgemini.com/wp-content/uploads/2020/10/AI-and-the-Ethical-Conundrum-Report.pdf)

Nautilus: Is Artificial Intelligence Permanently Inscrutable?

[nautil.us/is-artificial-intelligence-permanently-inscrutable-5116/](https://nautil.us/is-artificial-intelligence-permanently-inscrutable-5116/)

## Module 4: Creating AI principles

Google's AI Principles

[ai.google/principles/](https://ai.google/principles/)

Blog: AI at Google: our principles

[blog.google/technology/ai/ai-principles/](https://blog.google/technology/ai/ai-principles/)

Blog: Google AI Principles updates, six months in

[blog.google/technology/ai/google-ai-principles-updates-six-months](https://blog.google/technology/ai/google-ai-principles-updates-six-months)

Blog: An update on our work on AI and responsible innovation

[blog.google/technology/ai/update-work-ai-responsible-innovation/](https://blog.google/technology/ai/update-work-ai-responsible-innovation/)

Blog: Taking care of business with Responsible AI

[cloud.google.com/blog/products/ai-machine-learning/taking-care-of-business-with-responsible-ai](https://cloud.google.com/blog/products/ai-machine-learning/taking-care-of-business-with-responsible-ai)

Blog: Responsible AI: Putting our principles into action

[blog.google/technology/ai/responsible-ai-principles/](https://blog.google/technology/ai/responsible-ai-principles/)

Nature: The global landscape of AI ethics guidelines

[nature.com/articles/s42256-019-0088-2](https://nature.com/articles/s42256-019-0088-2)

Berkman Klein Center: Principled Artificial Intelligence: Mapping Consensus in Ethical and Rights-Based Approaches to Principles for AI

[papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3518482](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3518482)

Markkula Center for Applied Ethics: Technology and Engineering Practice: Ethical Lenses to Look Through

[scu.edu/ethics-in-technology-practice/ethical-lenses/](https://scu.edu/ethics-in-technology-practice/ethical-lenses/)

TensorFlow: Responsible AI Toolkit

[tensorflow.org/responsible\\_ai](https://tensorflow.org/responsible_ai)

World Economic Forum: Empowering AI Leadership – C-Suite Toolkit  
[weforum.org/reports/empowering-ai-leadership-ai-c-suite-toolkit](https://www.weforum.org/reports/empowering-ai-leadership-ai-c-suite-toolkit)

## Module 5: Operationalizing AI principles: setting up and running reviews

Blog: Responsible AI: Putting our principles into action

[blog.google/technology/ai/responsible-ai-principles/](https://blog.google/technology/ai/responsible-ai-principles/)

World Economic Forum: Ethics by Design: An organizational approach to responsible use of technology

[weforum.org/whitepapers/ethics-by-design-an-organizational-approach-to-responsible-use-of-technology](https://www.weforum.org/whitepapers/ethics-by-design-an-organizational-approach-to-responsible-use-of-technology)

Google: The value of a shared understanding of AI models

[modelcards.withgoogle.com/about](https://modelcards.withgoogle.com/about)

Google Cloud Blog: Celebrity Recognition

[cloud.google.com/blog/products/ai-machine-learning/celebrity-recognition-now-available-to-approved-media-entertainment-customers](https://cloud.google.com/blog/products/ai-machine-learning/celebrity-recognition-now-available-to-approved-media-entertainment-customers)

Google: Our approach to facial recognition

[ai.google/responsibilities/facial-recognition/](https://ai.google/responsibilities/facial-recognition/)

BSR: Google's Human Rights by Design

[bsr.org/en/our-insights/blog-view/google-human-rights-impact-assessment-celebrity-recognition](https://bsr.org/en/our-insights/blog-view/google-human-rights-impact-assessment-celebrity-recognition)

BSR Report Executive Summary: Google Celebrity Recognition API Human Rights Assessment

[services.google.com/fh/files/blogs/bsr-google-cr-api-hria-executive-summary.pdf](https://services.google.com/fh/files/blogs/bsr-google-cr-api-hria-executive-summary.pdf)

Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification

[gendershades.org](https://gendershades.org)

Google Responsible AI practices: Interpretability

[ai.google/responsibilities/responsible-ai-practices/?category=interpretability](https://ai.google/responsibilities/responsible-ai-practices/?category=interpretability)

Google Cloud Whitepaper: AI Explainability

[storage.googleapis.com/cloud-ai-whitepapers/AI%20Explainability%20Whitepaper.pdf](https://storage.googleapis.com/cloud-ai-whitepapers/AI%20Explainability%20Whitepaper.pdf)

Google People + AI Guidebook: Explainability + Trust

[pair.withgoogle.com/chapter/explainability-trust](https://pair.withgoogle.com/chapter/explainability-trust)

Improving skin tone representation across Google

[blog.google/products/search/monk-skin-tone-scale/](https://blog.google/products/search/monk-skin-tone-scale/)

Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification

[proceedings.mlr.press/v81/buolamwini18a/buolamwini18a.pdf](https://proceedings.mlr.press/v81/buolamwini18a/buolamwini18a.pdf)



## Module 6: Operationalizing AI Principles: issue spotting and lessons learned

Markkula Center for Applied Ethics: A Framework for Ethical Decision Making  
[scu.edu/ethics/ethics-resources/a-framework-for-ethical-decision-making/](https://scu.edu/ethics/ethics-resources/a-framework-for-ethical-decision-making/)

Google Whitepaper: Perspectives on Issues in AI Governance  
[ai.google/static/documents/perspectives-on-issues-in-ai-governance.pdf](https://ai.google/static/documents/perspectives-on-issues-in-ai-governance.pdf)

Google Whitepaper: Building a responsible regulatory framework for AI  
[ai.google/static/documents/building-a-responsible-regulatory-framework-for-ai.pdf](https://ai.google/static/documents/building-a-responsible-regulatory-framework-for-ai.pdf)

Google: Responsible AI practices  
[ai.google/responsibilities/responsible-ai-practices/](https://ai.google/responsibilities/responsible-ai-practices/)

## Module 7: Continuing the journey towards responsible AI

Google Cloud: Responsible AI  
[cloud.google.com/responsible-ai](https://cloud.google.com/responsible-ai)

Google: Building responsible AI for everyone  
[ai.google/responsibilities](https://ai.google/responsibilities)

Reach out to the Google Cloud Responsible AI team directly  
[responsibleai@google.com](mailto:responsibleai@google.com)