AI Revolution Intensive: 100 Hours to Master Generative AI and Build Your Future

1. **Course Overview**

This intensive 100-hour program transforms you from AI novice to proficient creator through expert-led sessions, hands-on projects, and real-world applications. Dive into generative AI fundamentals, diffusion models, media manipulation, custom agents, and no-code automations. Build a portfolio of AI tools, including a capstone project integrating all skills.

- **Target Audience**: Beginners to intermediate learners interested in generative AI, content creation, or automation.

- **Prerequisites**: Basic computer skills; familiarity with Python is helpful but not required.

- **Format**: Mix of live sessions (10 hours/module), self-paced assignments (10 hours/module), group discussions, and workbook activities. Total: 100 hours over 5 modules (e.g., one per weekend).

- **Outcomes**: Master generative AI, create deployable projects, understand ethics, and gain a roadmap to become an AI generalist. Certificate and portfolio template provided.

- **Resources**: Shared Google Drive with workbooks, datasets, code templates; access to a Discord community for peer support; recommended readings (e.g., "Hands-On Machine Learning" by Aurélien Géron). Bonus: Guest Q&A with AI experts.

Module 1: Generative AI Fundamentals (20 Hours)

What Will You Learn?

1. Understand neural networks as the building blocks of AI, including layers, activation functions, and backpropagation.
2. Explore the correlation between Natural Language Processing (NLP) and Large Language Models (LLMs), with examples like sentiment analysis leading to chatbots.
3. Dive into probability distributions essential for AI generation, such as Gaussian and softmax.
4. Master tokenization techniques for breaking down text into manageable units.
5. Learn thought generation processes in AI, including chain-of-thought prompting.
6. Ethical tip: Discuss biases in training data and mitigation strategies.

Tools

1. TensorFlow/Keras (for neural network demos).
2. Hugging Face Transformers (for NLP/LLM experiments).
3. Bonus: Jupyter Notebooks for interactive coding.

Estimated Time: 10 hours live + 10 hours assignments/self-study.

Assignments

1. **Build a simple neural network**:
    - Step 1: Install TensorFlow/Keras in a Jupyter Notebook.
    - Step 2: Create a basic feedforward network to classify sample data (e.g., MNIST digits).
    - Step 3: Train the model and visualize accuracy with plots.
    - Expected Outcome: A working notebook. Submit via Google Drive with a brief report on learnings.
    - Tips: Use free Colab for no-setup access; experiment with hyperparameters like learning rate.

2. **Experiment with NLP and LLM correlation**:
    - Step 1: Use Hugging Face to load a pre-trained LLM like GPT-2.
    - Step 2: Apply tokenization to a text sample and perform NLP tasks (e.g., named entity recognition).
    - Step 3: Generate text using prompts and analyze probability outputs.
    - Expected Outcome: A documented experiment with 5 examples. Share in a community forum.
    - Tips: Compare tokenizers (e.g., Byte-Pair Encoding); note ethical issues like generated misinformation.

3. **Workbook-Led Activity: Probability and Thought Generation**:
    - Step 1: Complete workbook exercises on distributions (e.g., simulate Gaussian noise).
    - Step 2: Design a chain-of-thought prompt for an LLM to solve a problem (e.g., math riddle).
    - Step 3: Test and refine for better "thought" outputs.
    - Expected Outcome: Filled workbook pages. Discuss in group sessions.
    - Tips: Use online simulators for distributions; focus on real-world apps like recommendation systems.

Module 2: Introduction to Diffusion Models (20 Hours)

What Will You Learn?

1. Grasp the core concept of diffusion: adding/removing noise to generate images/videos.
2. Break down the math, including forward/reverse processes and U-Net architectures.
3. Explore categories like Denoising Diffusion Probabilistic Models (DDPM) and Stable Diffusion variants.
4. Discuss the future: Integration with multimodal AI and efficiency improvements.
5. Real-world example: How diffusion powers tools like DALL-E.
6. Ethical tip: Address copyright issues in generated content.

Tools

1. Stable Diffusion (via Hugging Face).
2. PyTorch (for math demos).
3. Bonus: Google Colab for running models.

Estimated Time: 10 hours live + 10 hours assignments/self-study.

Assignments

1. **Implement a basic diffusion process**:
    - Step 1: Set up Stable Diffusion in Colab.
    - Step 2: Add noise to an image and reverse it step-by-step.
    - Step 3: Visualize the denoising stages.
    - Expected Outcome: Generated images with process logs. Upload to Drive.
    - Tips: Start with low-resolution for speed; explore math equations in code comments.

2. **Compare diffusion model categories**:
    - Step 1: Run examples of DDPM and latent diffusion models.

- Step 2: Generate 3 images per category and compare quality/speed.
- Step 3: Write a short analysis on future trends.
- Expected Outcome: Comparison report. Post in the forum for feedback.
- Tips: Use pre-trained models; discuss ethics like deepfake risks.

3. **Workbook-Led Activity: Math Behind Diffusion**:
    - Step 1: Solve workbook problems on probability in diffusion.
    - Step 2: Sketch a U-Net diagram and explain its role.
    - Step 3: Group discussion on future applications.
    - Expected Outcome: Completed workbook. Share insights.
    - Tips: Reference free YouTube tutorials for visuals.

Module 3: Image and Video Manipulation (20 Hours)

What Will You Learn?

1. Master every MidJourney feature, from parameters to styles.
2. Craft effective text-to-image and image-to-image prompts.
3. Generate consistent characters/images using seeds and references.
4. Build realistic images with control nets and inpainting.
5. Introduction to Runway ML for video generation.
6. Text-to-video prompting techniques.
7. Audio generation with AI, including voice cloning and music.
8. Connect all elements for holistic media creation.
9. Progressive build: Use diffusion from Module 2 in prompts.
10. Ethical tip: Ensure consent for voice cloning and attribute AI content.

Tools

1. MidJourney (via Discord).
2. Runway ML.
3. ElevenLabs (for audio).
4. Bonus: Adobe Firefly for comparisons.

Estimated Time: 10 hours live + 10 hours assignments/self-study.

Assignments

1. **Dive into MidJourney features for image generation**:
    - Step 1: Join MidJourney Discord and generate 5 text-to-image prompts (e.g., "Futuristic cityscape, realistic style").
    - Step 2: Use image-to-image with an uploaded reference.
    - Step 3: Apply consistency techniques like --ar for aspect ratio.
    - Expected Outcome: Portfolio of images. Share links in the forum.

- Tips: Experiment with parameters like --v6 for latest version.

2. **Create text-to-video and audio content**:
    - Step 1: In Runway ML, craft a prompt for a 10-second video (e.g., "Calm ocean waves at sunset").
    - Step 2: Generate audio with ElevenLabs, cloning a neutral voice for narration.
    - Step 3: Combine in a simple editor like CapCut.
    - Expected Outcome: Short media clip. Upload demo video.
    - Tips: Use soft background music; avoid subtitles for clean output.

3. **Workbook-Led Activity: Connecting Dots for Media**:
    - Step 1: Build a consistent image series using workbook prompts.
    - Step 2: Integrate audio and video elements.
    - Step 3: Discuss real-world uses like marketing.
    - Expected Outcome: Integrated project. Group review.
    - Tips: Focus on ethical labeling of AI-generated media.

Module 4: Building Custom GPTs and Agentic Workflows (20 Hours)

What Will You Learn?

1. Connect concepts from prior modules for advanced AI systems.
2. Build your first custom GPT using OpenAI's builder.
3. Create an AI bot that mimics your writing style with fine-tuning.
4. Fine-tune GPTs for specific domains.
5. Explore the future of generative AI, like agentic systems.
6. Develop a personal roadmap to become an AI generalist.
7. Ethical tip: Handle data privacy in custom models.

Tools

1. OpenAI Custom GPTs.
2. LangChain (for workflows).
3. Bonus: CrewAI for multi-agent setups.

Estimated Time: 10 hours live + 10 hours assignments/self-study.

Assignments

1. **Build Your First Custom GPT**:
    - Step 1: Use OpenAI's GPT builder to upload knowledge base.
    - Step 2: Define actions and test responses.
    - Step 3: Integrate with Module 3 media tools.
    - Expected Outcome: Shareable GPT link. Submit with test queries.
    - Tips: Focus on niche use cases like content writing.

2. **Create an AI Bot That Writes Like You**:
    - Step 1: Collect sample writings and fine-tune via API.
    - Step 2: Build agentic workflow with LangChain (e.g., research → write).
    - Step 3: Evaluate style match with 5 generations.

    - Expected Outcome: Bot demo and report. Post in the forum.
    - Tips: Use ethical data sources; avoid personal info.

3. **Workbook-Led Activity: Future Roadmap**:
    - Step 1: Map your skills in the workbook.
    - Step 2: Design a 6-month AI learning plan.
    - Step 3: Group brainstorming on trends.
    - Expected Outcome: Personalized roadmap. Share for feedback.
    - Tips: Include resources like Coursera AI courses.

Module 5: AI Automations with No-Code (20 Hours)

What Will You Learn?

1. Introduction to Make.com for visual automations.
2. Set up trigger actions based on events (e.g., email → AI response).
3. Connect multiple apps with AI integrations.
4. Integrate ChatGPT API for conversational automations.
5. Build your first AI workflow, scaling to complex systems.
6. Capstone: Combine all modules into an automated AI product.
7. Ethical tip: Monitor automations for unintended biases.

Tools

1. Make.com.
2. Zapier (alternative).
3. OpenAI API.
4. Bonus: Airtable for data management.

Estimated Time: 10 hours live + 10 hours assignments/self-study.

Assignments

1. **Build Your First AI Workflow**:
    - Step 1: Sign up for Make.com and set a trigger (e.g., new tweet).
    - Step 2: Add AI actions like GPT summarization.
    - Step 3: Test with real data and debug.
    - Expected Outcome: Active workflow link. Share demo.
    - Tips: Integrate Module 4 GPTs.

2. **Integrate ChatGPT API for Automations**:
    - Step 1: Get API key and connect to Make.com.
    - Step 2: Build conversational flow (e.g., query → response → email).
    - Step 3: Scale with multiple apps like Google Sheets.

    - Expected Outcome: End-to-end automation. Upload video walkthrough.
    - Tips: Handle rate limits; add error notifications.

3. **Workbook-Led Activity: Hands-On Capstone**:
    - Step 1: Use a workbook to design a full AI system (e.g., content generator + distributor).
    - Step 2: Implement using no-code tools.
    - Step 3: Present in final group session.
    - Expected Outcome: Launched prototype. Gather peer feedback.
    - Tips: Ensure accessibility; include calm voice elements in audio outputs.

Course Wrap-Up

- Review portfolio and key takeaways.
- Q&A on career paths in AI.
- Next steps: Alumni network, advanced certifications, and ongoing challenges.
