Embarking on a 100-day journey to master Generative AI is an exciting endeavor. Below is a structured roadmap designed to guide you from foundational concepts to advanced applications, incorporating a variety of high-quality resources from platforms like GitHub, Coursera, and YouTube.

**Days 1-10: Introduction to AI and Python**

* **Day 1:** Understand the basics of Artificial Intelligence (AI).
  + *Resource:* [AI Overview](https://www.geeksforgeeks.org/100-days-of-gate-data-science-ai/)
* **Days 2-3:** Learn Python programming essentials.
  + *Resource:* [Python for Beginners](https://github.com/h9-tect/100days_AI)
* **Days 4-5:** Explore data manipulation with libraries like NumPy and Pandas.
  + *Resource:* [NumPy Quickstart Tutorial](https://github.com/h9-tect/100days_AI)
* **Days 6-7:** Dive into data visualization using Matplotlib.
  + *Resource:* [Matplotlib Pyplot Tutorial](https://github.com/h9-tect/100days_AI)
* **Days 8-10:** Work on a mini-project to consolidate your Python skills.

**Days 11-20: Mathematics for AI**

* **Days 11-13:** Study linear algebra concepts, including vectors and matrices.
  + *Resource:* [Khan Academy Linear Algebra](https://github.com/h9-tect/100days_AI)
* **Days 14-16:** Learn calculus fundamentals, focusing on derivatives and integrals.
  + *Resource:* [Khan Academy Calculus](https://github.com/h9-tect/100days_AI)
* **Days 17-20:** Understand probability and statistics basics.
  + *Resource:* [Khan Academy Probability](https://github.com/h9-tect/100days_AI)

**Days 21-30: Introduction to Machine Learning**

* **Days 21-23:** Grasp core machine learning concepts and algorithms.
  + *Resource:* [Andrew Ng's Machine Learning Course](https://github.com/h9-tect/100days_AI)
* **Days 24-26:** Implement algorithms like linear and logistic regression using Python.
  + *Resource:* [Hands-On Machine Learning with Scikit-Learn](https://github.com/h9-tect/100days_AI)
* **Days 27-30:** Explore model evaluation techniques and practice with real-world datasets.

**Days 31-40: Deep Learning Fundamentals**

* **Days 31-33:** Learn about neural networks and their architectures.
  + *Resource:* [Deep Learning Book](https://github.com/h9-tect/100days_AI)
* **Days 34-36:** Study activation functions and training processes.
  + *Resource:* [Deep Learning Specialization by Andrew Ng](https://github.com/h9-tect/100days_AI)
* **Days 37-40:** Get hands-on with frameworks like TensorFlow and Keras.
  + *Resource:* [TensorFlow Documentation](https://github.com/h9-tect/100days_AI)

**Days 41-50: Introduction to Generative AI**

* **Days 41-43:** Understand the fundamentals of Generative AI and its applications.
  + *Resource:* [Generative AI Overview](https://github.com/story-of-data/GenerativeAI-Roadmap)
* **Days 44-46:** Explore different types of generative models, such as GANs and VAEs.
  + *Resource:* [Types of Generative AI Models](https://github.com/story-of-data/GenerativeAI-Roadmap)
* **Days 47-50:** Study the working mechanisms of Generative AI.
  + *Resource:* [How Does Generative AI Work?](https://github.com/story-of-data/GenerativeAI-Roadmap)

**Days 51-60: Advanced Generative Models**

* **Days 51-53:** Delve into Generative Adversarial Networks (GANs).
  + *Resource:* [GANs Tutorial](https://github.com/story-of-data/GenerativeAI-Roadmap)
* **Days 54-56:** Learn about Variational Autoencoders (VAEs).
  + *Resource:* [VAEs Tutorial](https://github.com/story-of-data/GenerativeAI-Roadmap)
* **Days 57-60:** Study transformer models and their role in Generative AI.
  + *Resource:* [Transformers Tutorial](https://github.com/story-of-data/GenerativeAI-Roadmap)

**Days 61-70: Practical Applications and Tools**

* **Days 61-63:** Familiarize yourself with Generative AI tools and platforms.
  + *Resource:* [Generative AI Tools](https://github.com/story-of-data/GenerativeAI-Roadmap)
* **Days 64-66:** Work on projects involving image and text generation.
  + *Resource:* [ProjectProRepo/Generative-AI](https://github.com/ProjectProRepo/Generative-AI)
* **Days 67-70:** Explore real-world applications of Generative AI across various industries.

**Days 71-80: Specialized Topics**

* **Days 71-73:** Study Large Language Models (LLMs) and their architectures.
  + *Resource:* [LLM Architecture](https://roadmap.sh/r/genai-roadmap-2024)
* **Days 74-76:** Learn about prompt engineering in Generative AI.
  + *Resource:* [Prompt Engineering](https://roadmap.sh/r/genai-roadmap-2024)
* **Days 77-80:** Understand fine-tuning and pre-training techniques for models.
  + *Resource:* [Fine Tuning](https://roadmap.sh/r/genai-roadmap-2024)

**Days 81-90: Hands-On Projects**

* **Days 81-85:** Engage in a project focusing on text generation or chatbot development.
  + *Resource:* [Microsoft's Generative AI for Beginners](https://github.com/microsoft/generative-ai-for-beginners)
* **Days 86-90:** Work on a project involving image generation or style transfer.

**Days 91-100: Review and Future Directions**

* **Days 91-95:** Review all concepts learned and refine your projects.
* **Days 96-98:** Explore emerging trends and research in Generative AI.
  + *Resource:* [Emerging Trends](https://roadmap.sh/r/genai-roadmap-2024)
* **Days 99-100:** Plan your next steps, such as contributing to open-source projects or pursuing advanced courses.