Building a Customizable GAN Package Tool in Python

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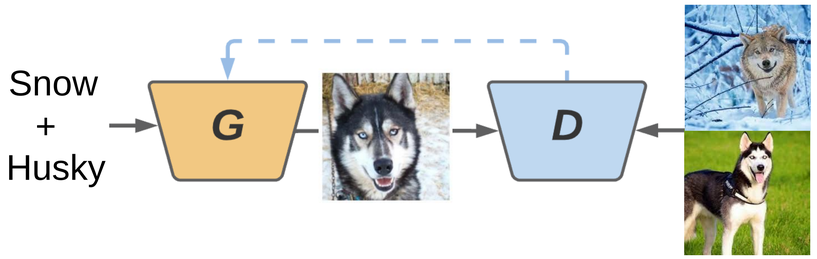
Motivation

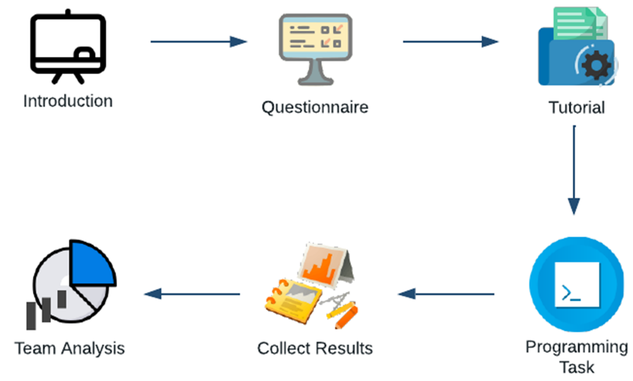


- GANs are cutting-edge AI technology
- GANs create a generative model through adversarial training
- A high barrier to development for non-expert programmers

Project Goals

- Streamline the process of building and training GANs
- Give users an intuitive interface for using and saving their GANs
- Enable users to build more advanced GANs
- Create intuitive documentation with a helpful tutorial
- Test package tutorial to ensure it is easy to understand
- Publish the package as an open-source project in Python

User Study Design



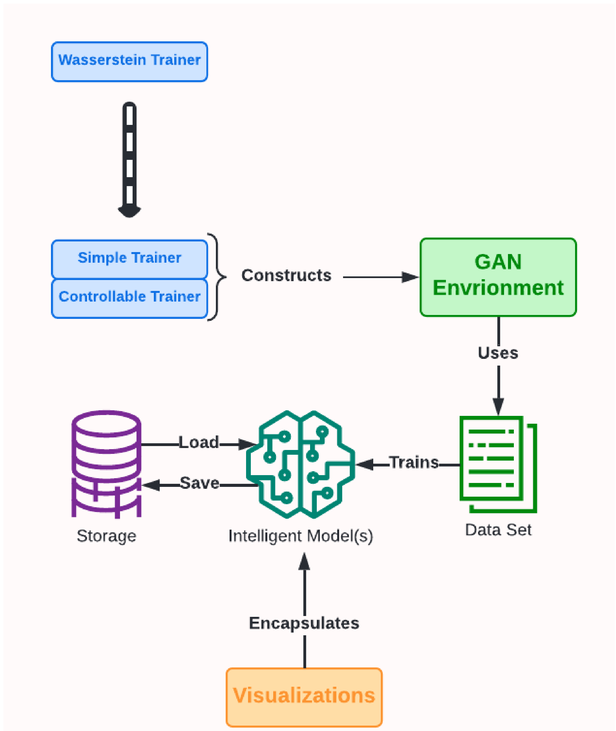
- We received IRB Approval: IRB-22-0367

Accomplishments

- Create an accessible GAN package
- Make readable documentation about the package
- Conduct a user study to test the package

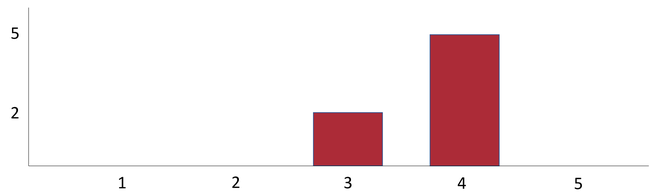
Features	Without Our Package...	With Our Package
Training	**30+ Lines of code**	`gan.train(7000, 16)`
Evaluating	**5 Lines of code**	`gan.eval_generator()`
Saving	**50+ Lines of code**	`gan.soft_save()`

Package Architecture



User Study Results

On a scale of 1 to 5 (low to high), how easy to follow was the tutorial for you?



- All 7 users were able to complete the coding challenge
- Users took on average an hour to complete the study
- Very few bugs identified, all fixed

Conclusion

- Develop a package that implements state of the art GANs
- Test the package to ensure it is highly usable
- Experiment on real users for package usability

References

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