



# YARN MASTER

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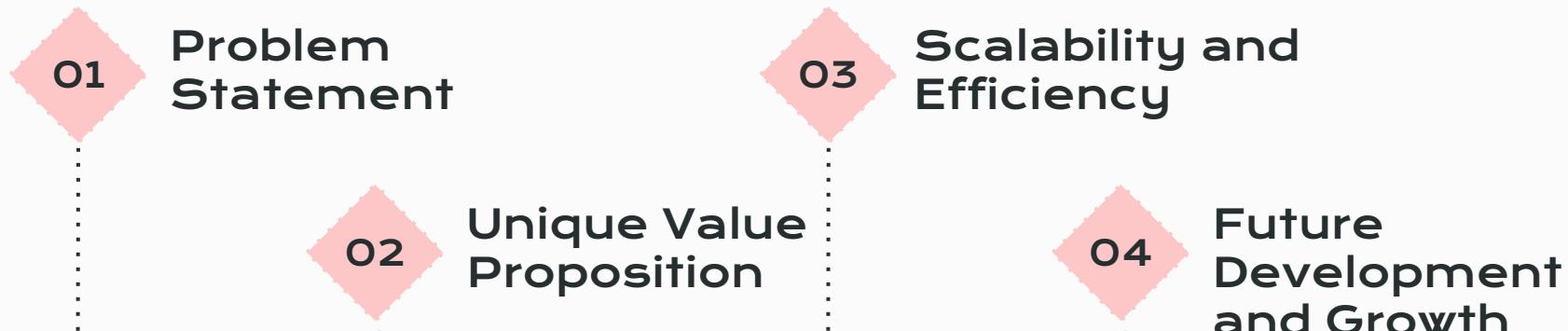
Wanying Zhang

Shiqi Wang

Jiahui Zhang



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# I. Problem Statement



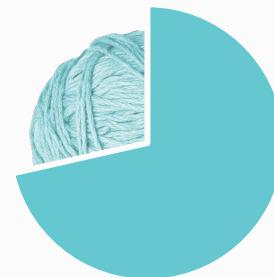
# Crochet Market Statistics



**10%**

## Population

Near 10% Americans  
crochet or knit[1]



**70%**

## Self-taught

70% of them  
need tutorials[2]

[1]<https://edinyarnfest.com/crochet-market-statistics/>

[2][https://www.reddit.com/r/crochet/comments/ue22on/crochet\\_survey\\_infographic/](https://www.reddit.com/r/crochet/comments/ue22on/crochet_survey_infographic/)



# Problems



## Limited Resources

- Limited access to reliable, step-by-step crochet patterns
- Unreliable instructions generated by current AI models



## Unique products

- Unique crochet/knit product found online
- Finished products seen in life



# Solutions



## AI-powered instructor

- Specialized models to interpret crochet images
- Produce corresponding pattern instructions

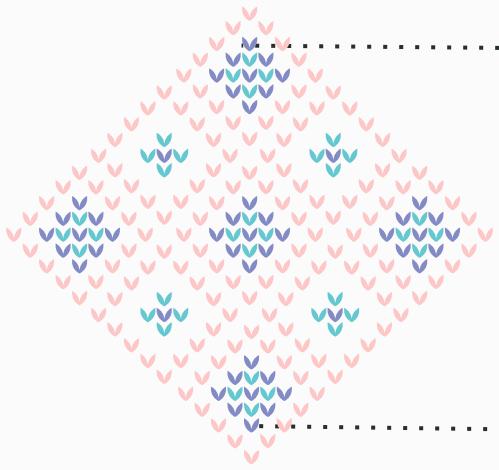


## User-friendly APP

- Upload or take a picture of a knitted or crochet product
- Generate and save pattern instructions
- Access other features



# Target Audience



## Crocheters/knitters

- Get pattern instructions
- Know the amount of yarn to use
- Find others with shared interests



## Supply Merchants

- Commercialization
- Recommend materials in the instructions



## II. Unique and Benefit





## Online/Physical Instructions

- Limited Customization Support
- Time-Consuming Instruction Search



## AI (ChatGPT) pattern-Generate

- Unstructured Output Format
- Imprecise Pattern Instructions



# Speciality

Prototype



GPT



Yarn Master



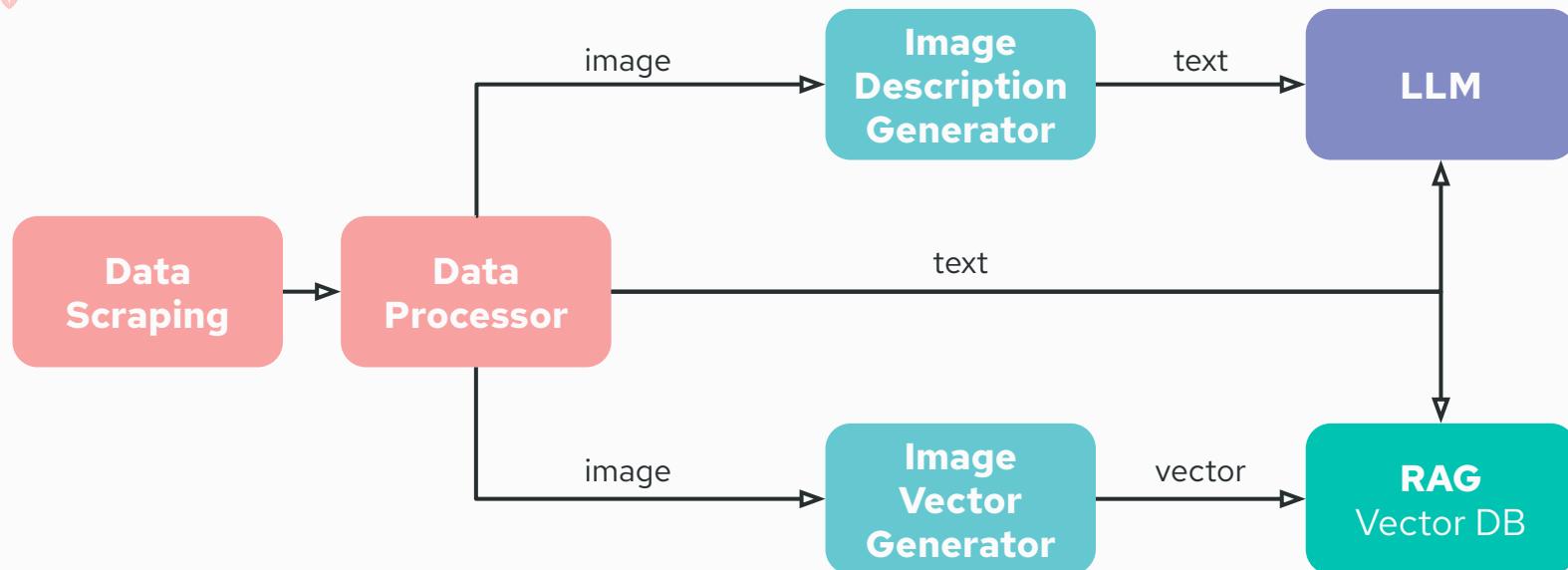


### III. Scalability and Efficiency



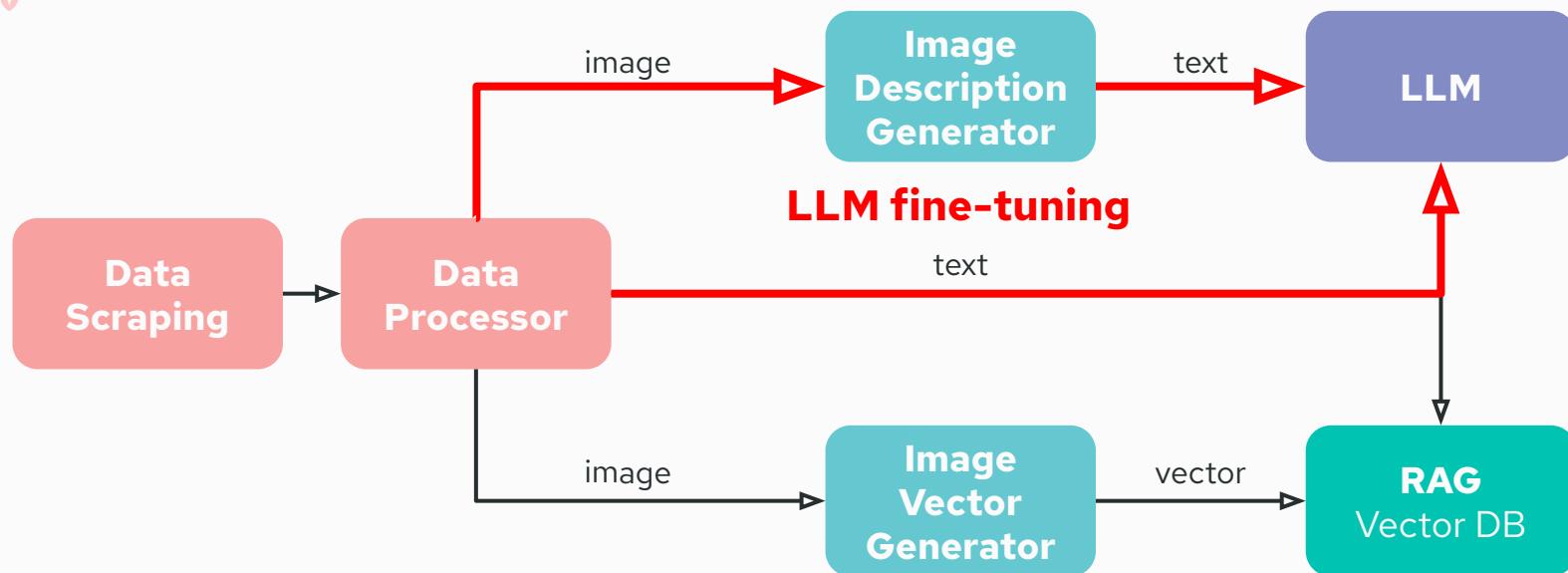
# Pipeline

Training



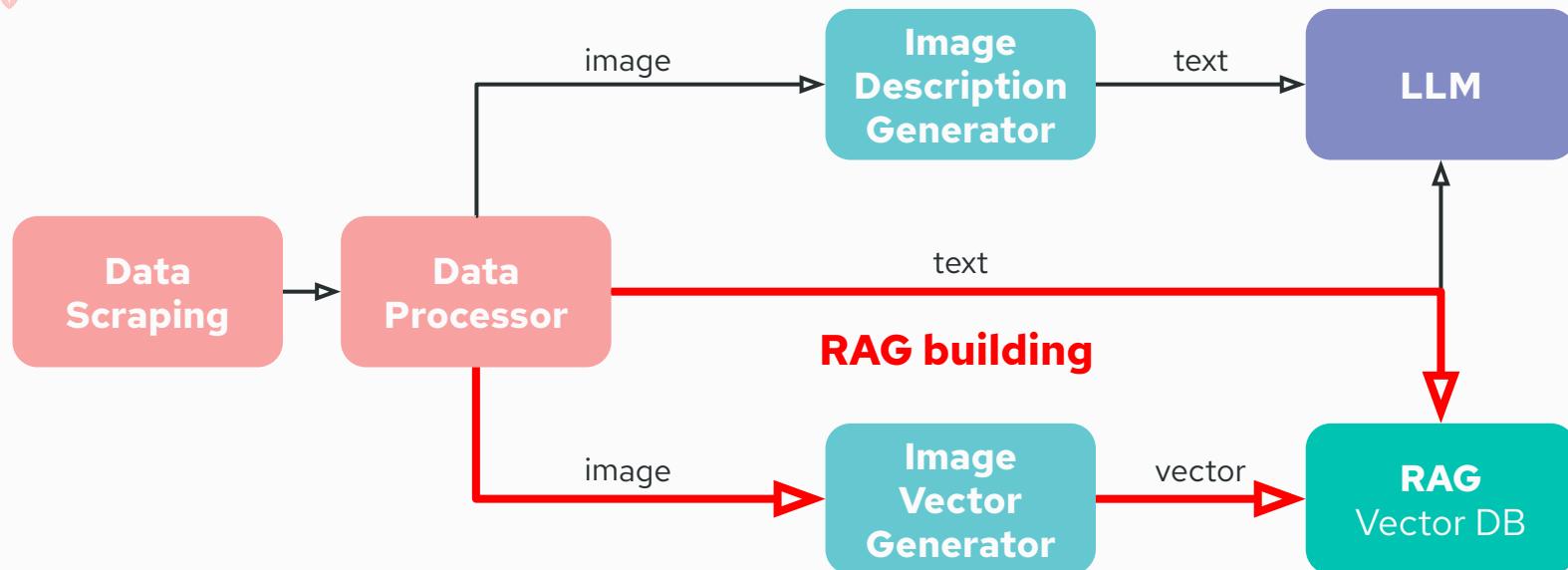
# Pipeline

Training



# Pipeline

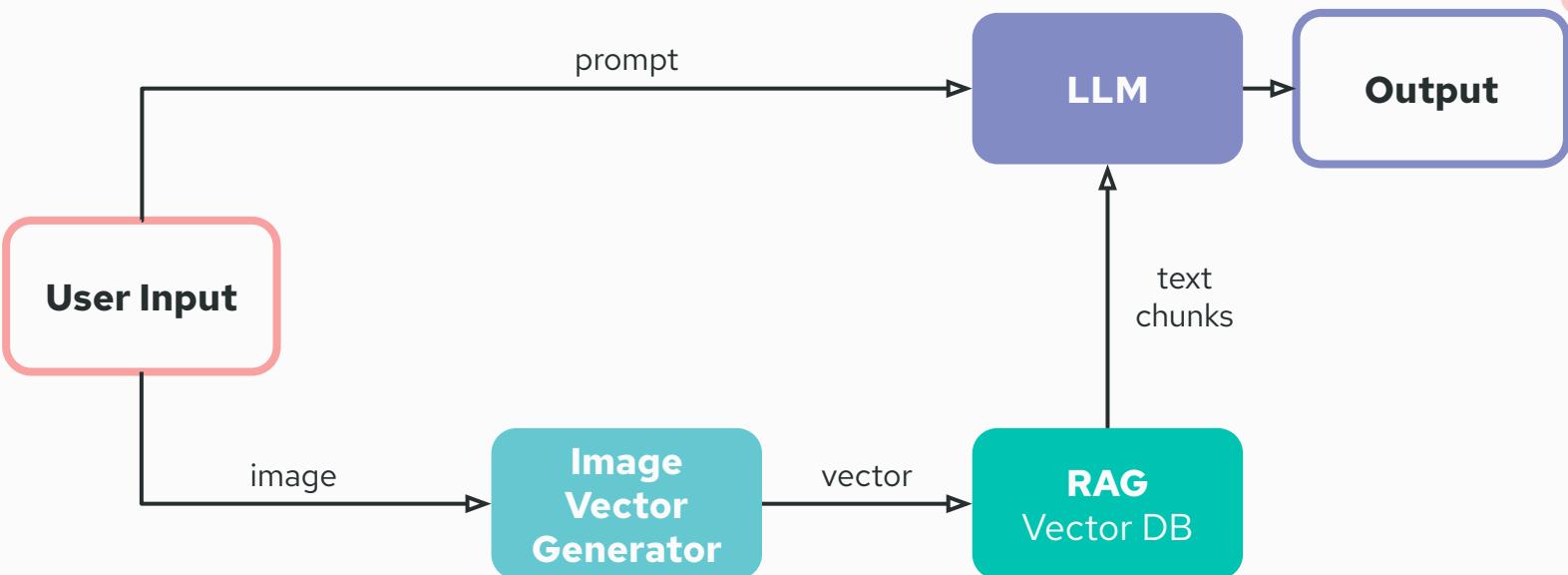
Training



# Pipeline

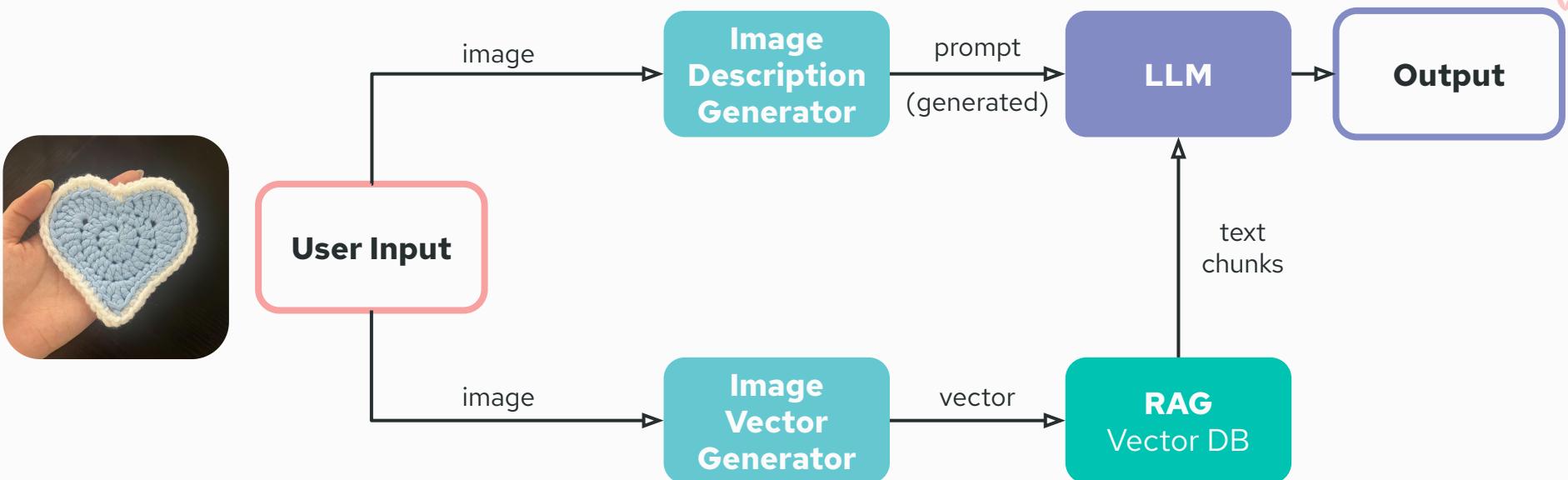
Deployment  
(Image + Text)

“How to make  
a heart-shaped  
blue coaster?”



# Pipeline

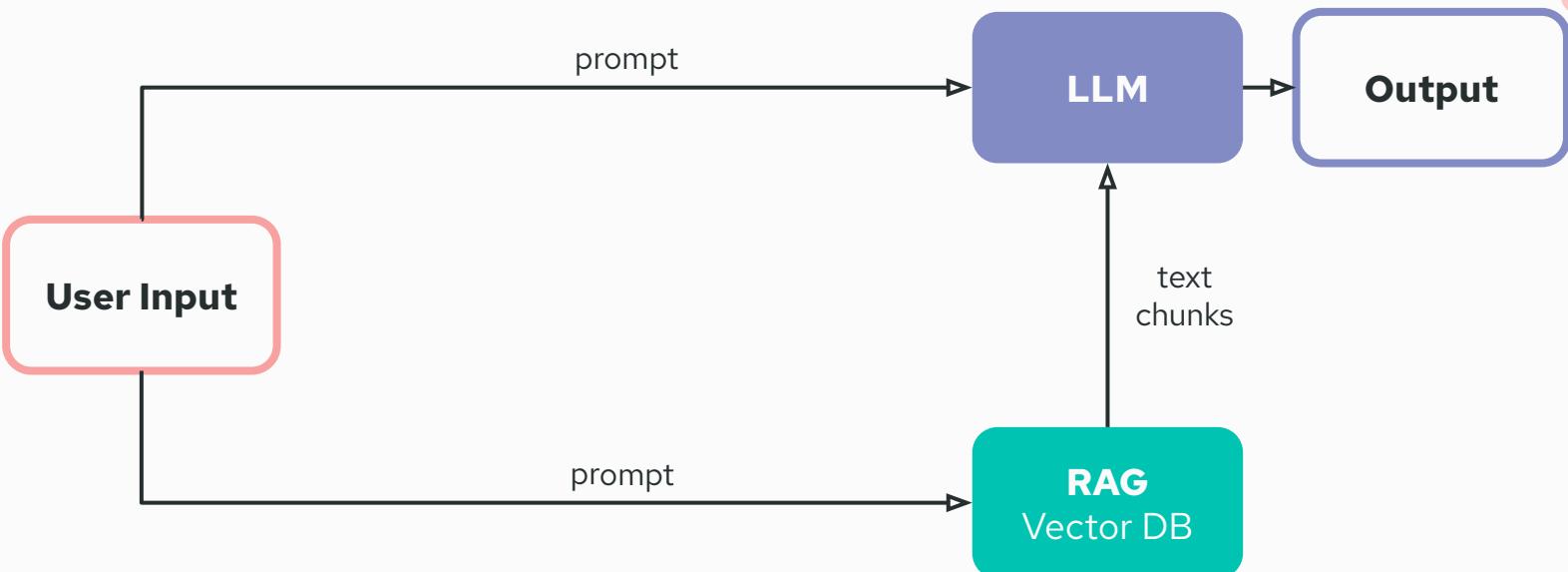
Deployment  
(Image only)



# Pipeline

Deployment  
(Text Only)

“How to make  
a heart-shaped  
blue coaster?”





## IV. Future Development and Growth Potential

# Next Steps

1

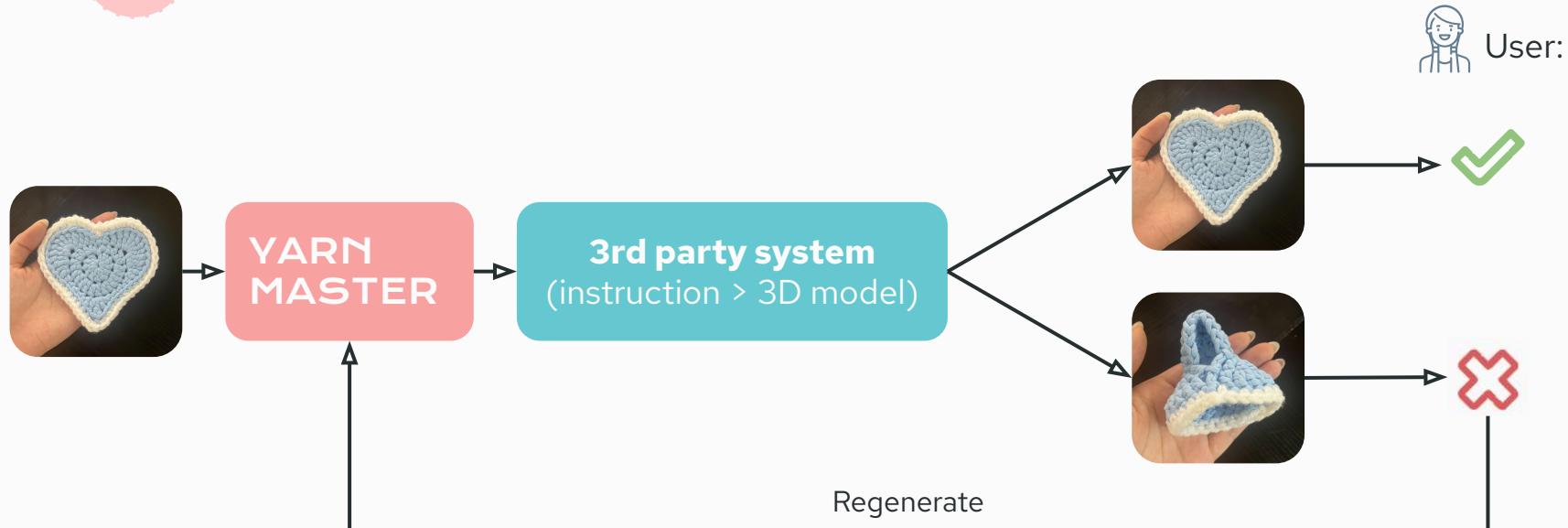
Continue to fine-tune Yarn Master with more complex designs (2D & 3D)



# Next Steps

2

Integrate Feedback Loop with 3rd-Party System:



# Market Growth



## Collaborate with Yarn Sellers



## Crochet Community





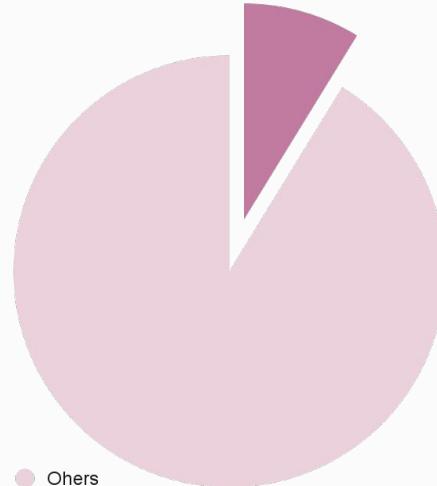
THANKS!



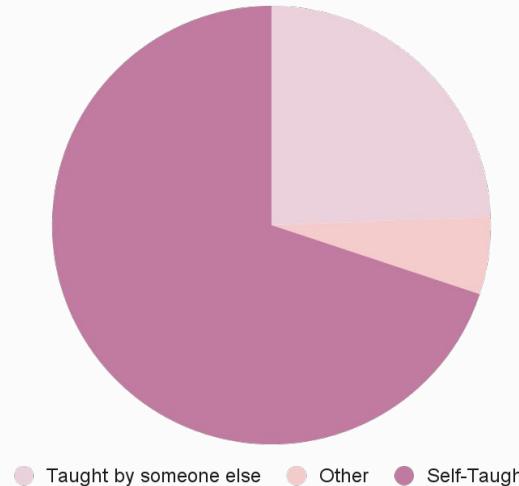
# Appendix

# Customer-end (Users):

Crocheter&Knitter Proportion of the US Population



Instruction Source

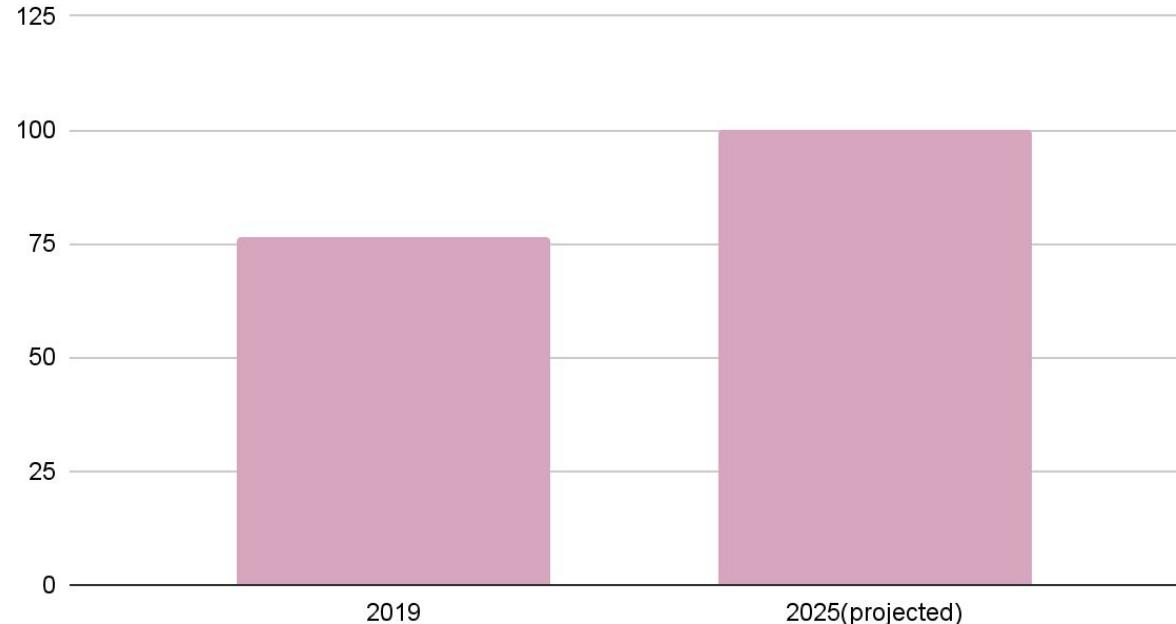


● Crocheters&Knitters    ● Others

● Taught by someone else    ● Other    ● Self-Taught

# Business-end

Global Yarn Market (Billion)

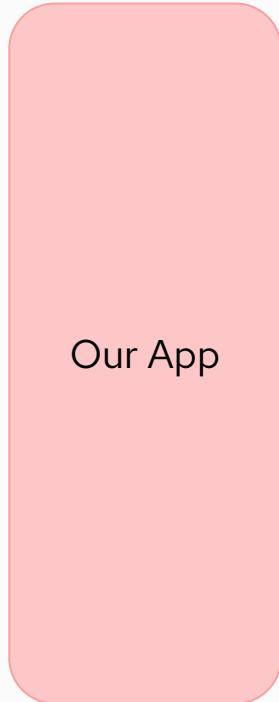




# Market Opportunity

How many yarns should I buy?

Where to find yarns with the color I want?



Our App

Provide accurate number of yarn to finish product.

Direct the merchandise best match the needs.



# Data Management

- No Data Versioning.
- Data Stored in buckets.



# Model Maintenance

- Periodically update the database using generated tutorial (thumb-up by users).
- Finetune the latest model using new instructions + images.