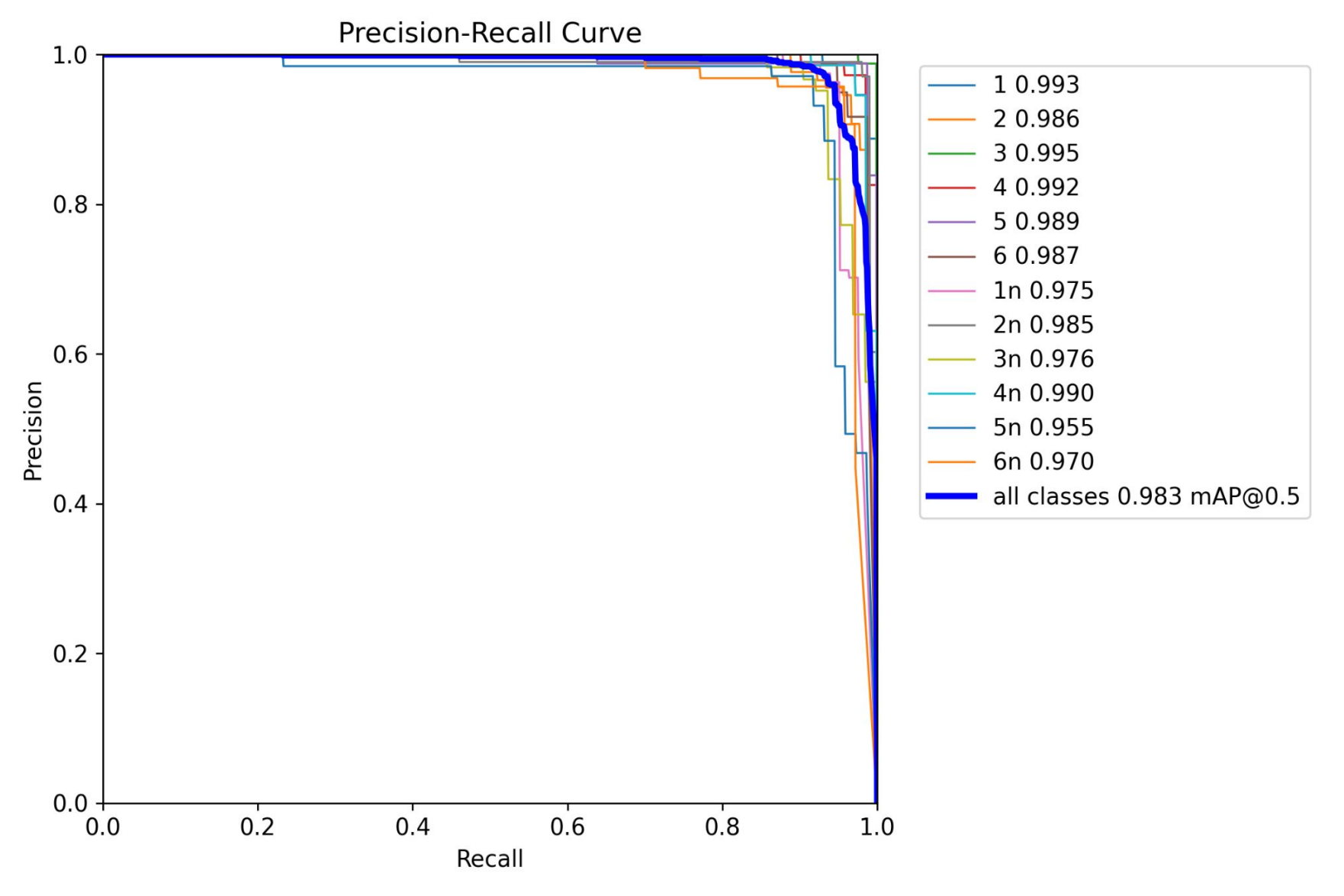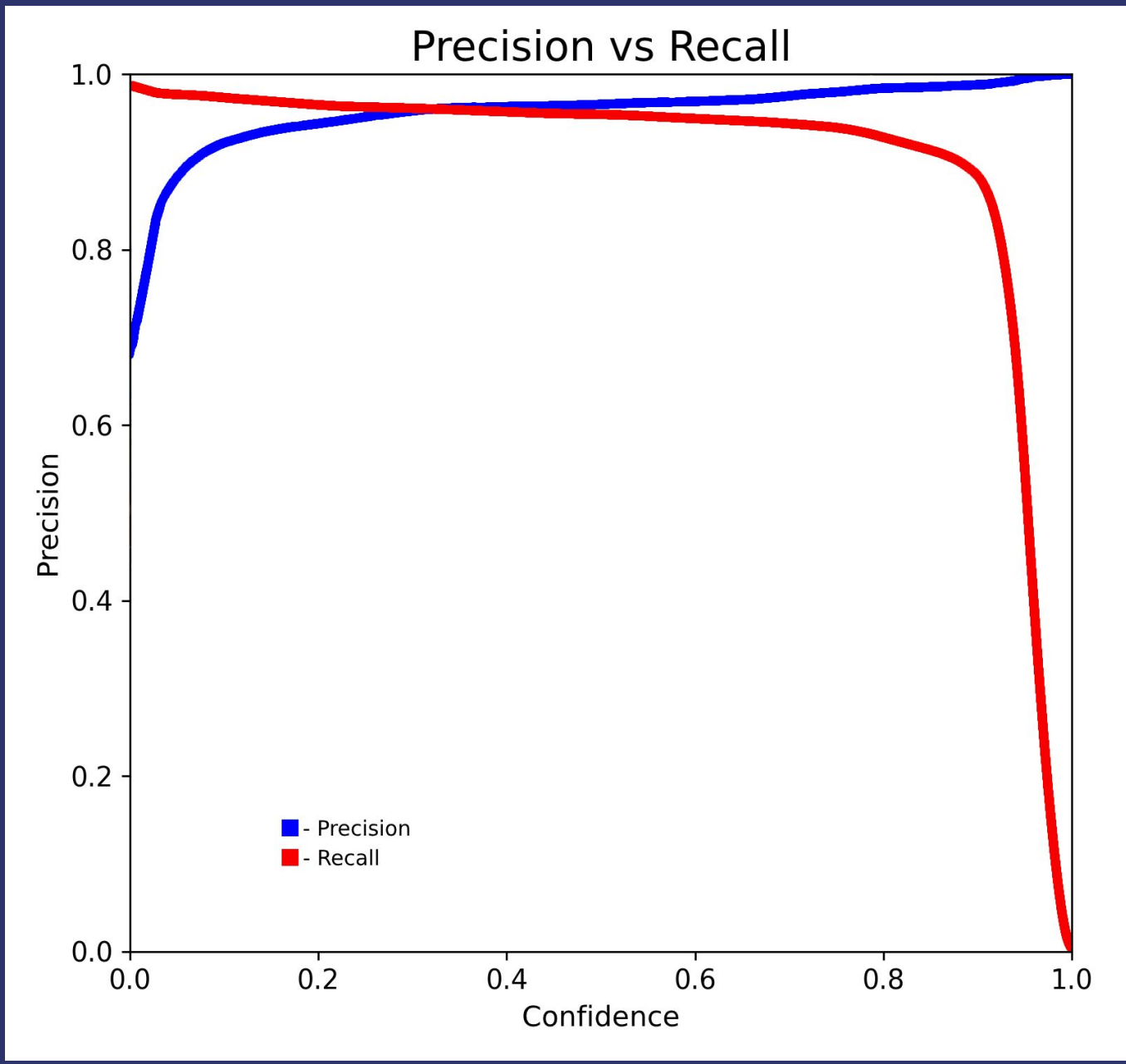# Machine Learning

Precision-Recall Curve

- Based on YOLOv10s by ultralytics
- Our object detection model is powerful but light enough to run even on older android devices
- Post-processing is done in the app to boost the model's performance even higher
  - The most common value for each die across 10 frames determines the results used by the app

ultralytics

Metric	Value
Precision	96.2%
Recall	95.9%
mAP50	98.3%
mAP50-95	81.1%

Precision vs Recall

Meet the Team

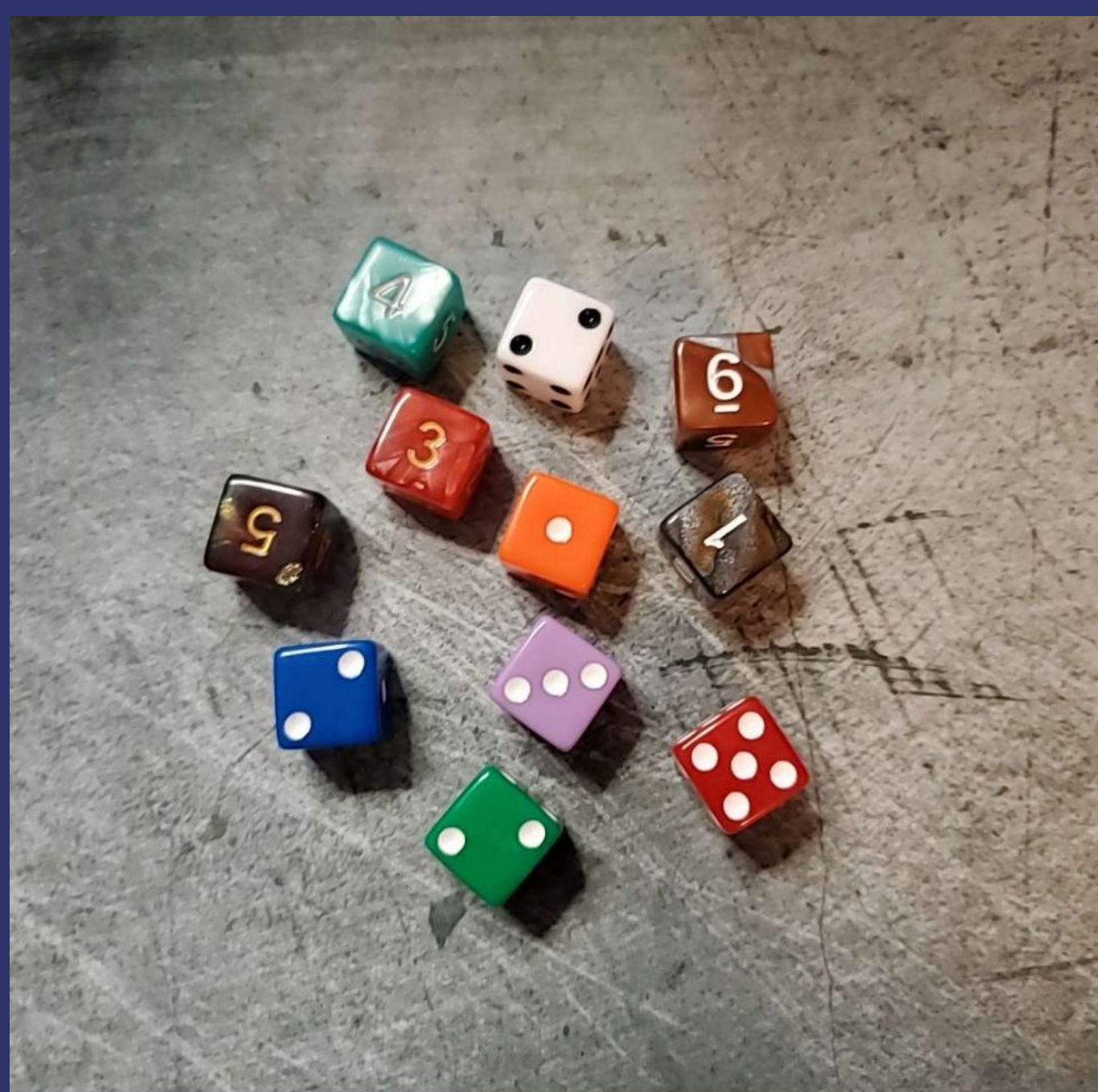- Jackson Cassidy - Wyatt Habinski - Christian Majid - Paul Puscas -

DieSpy

Struggling to count rolls? No problem!

An Android app designed to track and count dice rolls with friends, whether you're playing together in person or online. Includes real time updates, built-in chat, and persistent roll logs for easy collaboration.

Detection

Capture

Capture rolls to receive instant breakdowns
View last roll, and edit if necessary
Detection used with or without login
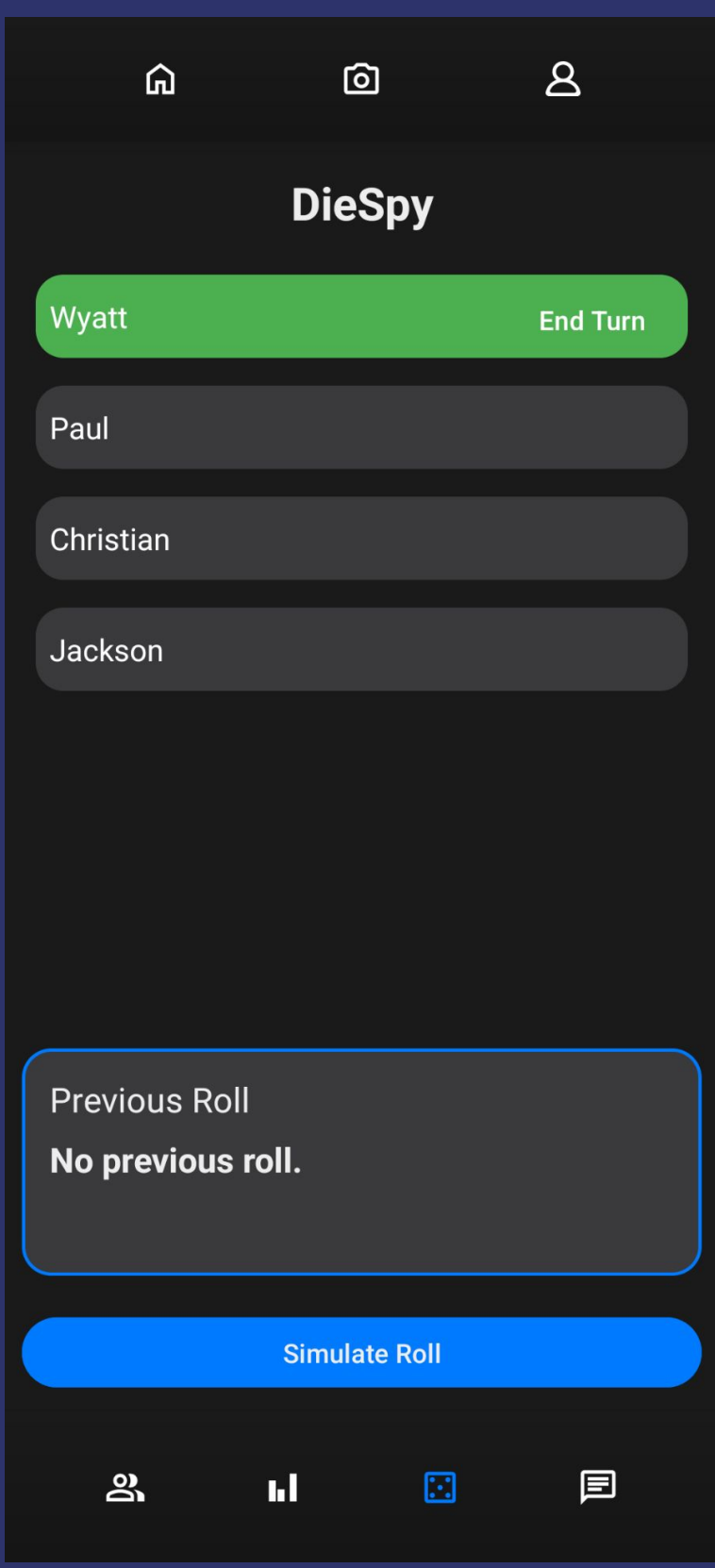If logged in, party sees roll immediately!

Dice Breakdown
Total: 34

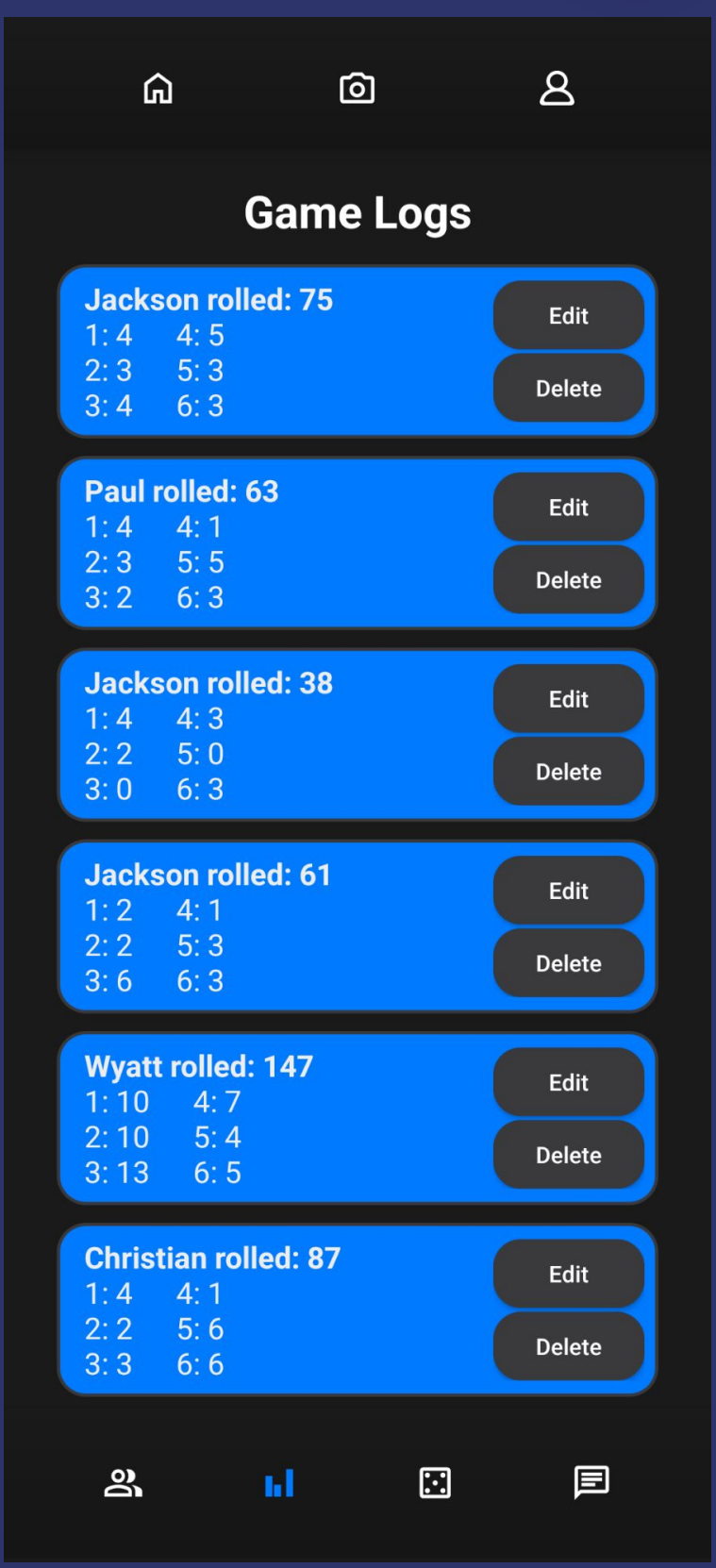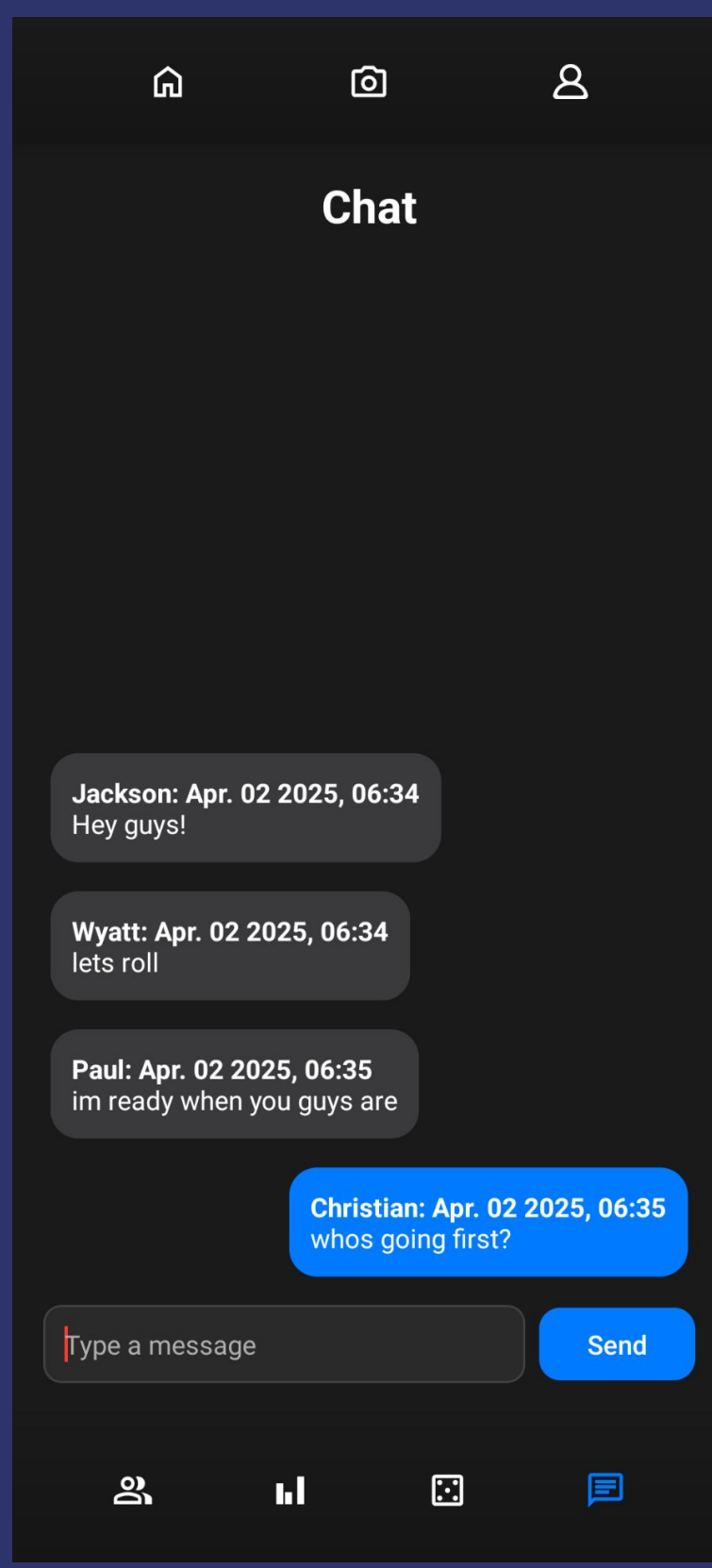| 1: 2	4: 1
2: 3	5: 2
3: 2	6: 1

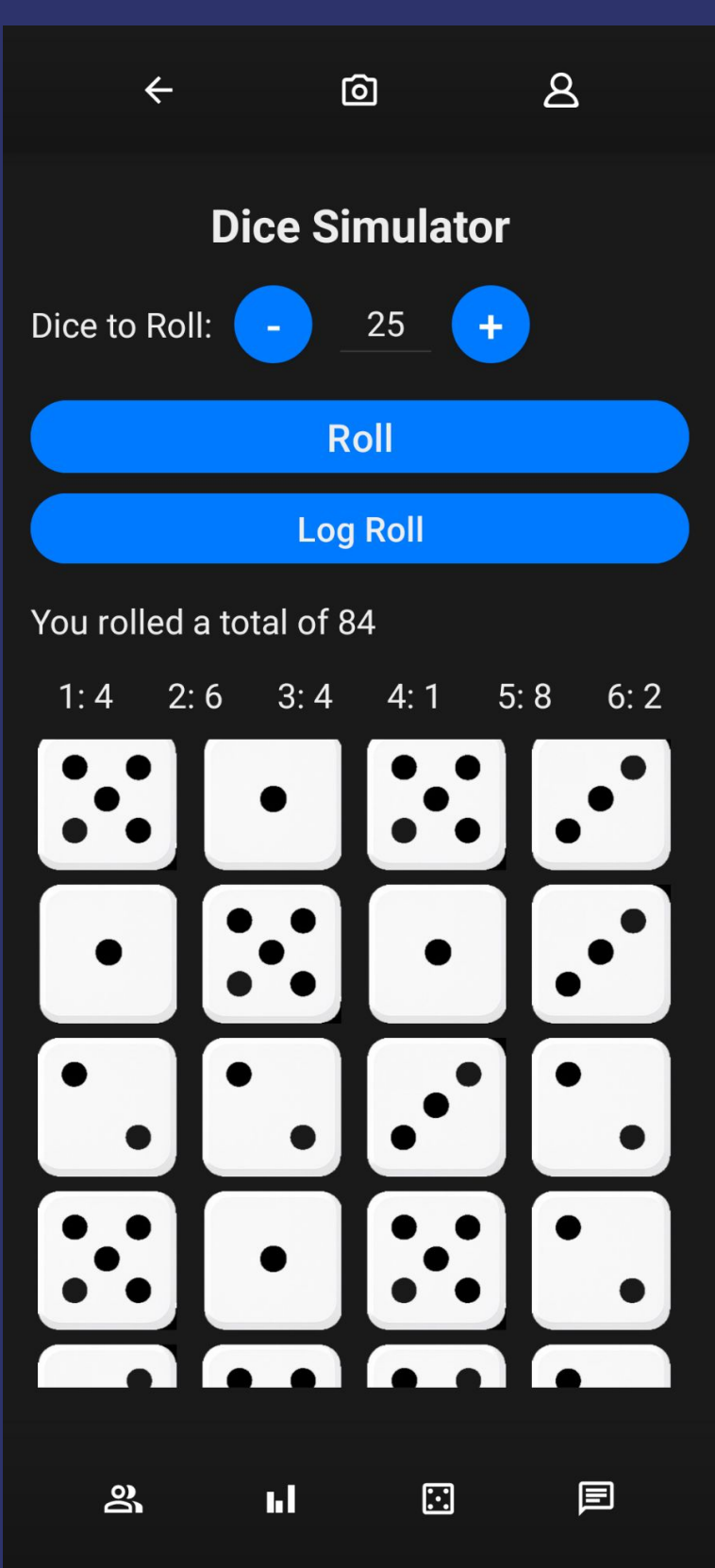Edit   Dismiss

Party Features

Play with your friends!

Compete with your friends!

Chat with your friends!

No Dice? No Problem! Just use the built-in simulator!

Workflow

PYTHON

Machine Learning

Managers

Async Coroutines
Real Time Updates
SnapShot Listeners

Detection Agent

Bluetooth Low Energy Connection for LAN Support

Firebase Firestore
Users | Parties | Chats | Logs

TensorFlow
YOLO v10 Lite

Kotlin

UI

XML

SDK Authentication
Encryption via HTTPS
OAuth 2.0 Based Tokens