peerguess

COLLABORATIVE CRYPTOCURRENCY TICKER

"Without data, you're just another person with an opinion"

W. Edwards Deming

White Paper

Version v2.0

Preface

peerguess is a cryptocurrency price ticker application where users may also guess future prices to earn gems; learn about community tendencies and reach sophisticated data.

We thought that it would be easier for our audience to perceive our project through a simple and concise set of Q & A framings rather than reading a long and boring narrative. In the following sections, you will find the unique functionality and features of peerguess, our innovative solution to track, predict and analyze cryptocurrency based on gamification principles, which we believe will attract a huge mass appeal.

We also believe that the audience of our project is the entire cryptocurrency community and therefore, we think that every member of the community, either a newbie investor or a seasoned miner should consider reading this White Paper.

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What is the story behind the idea?

Almost everyone in the cryptocurrency world checks the price of the currencies through an application, usually Coin Ticker, Blockfolio or similar. While none of these applications provide accurate information on what to invest, they merely allow to track the market status or your portfolio value.

We also know that almost everyone in the community (whether a crypto trader, a miner, a small investor or a big whale) spends endless time, experience, and even luck to look up for investment hints and clues from resources such as blogs, twitter, slack communities, troll boxes and coinmarketcap.com.

We thought about one solution to kill two birds with one stone, we thought about peerguess.

What is peerguess?

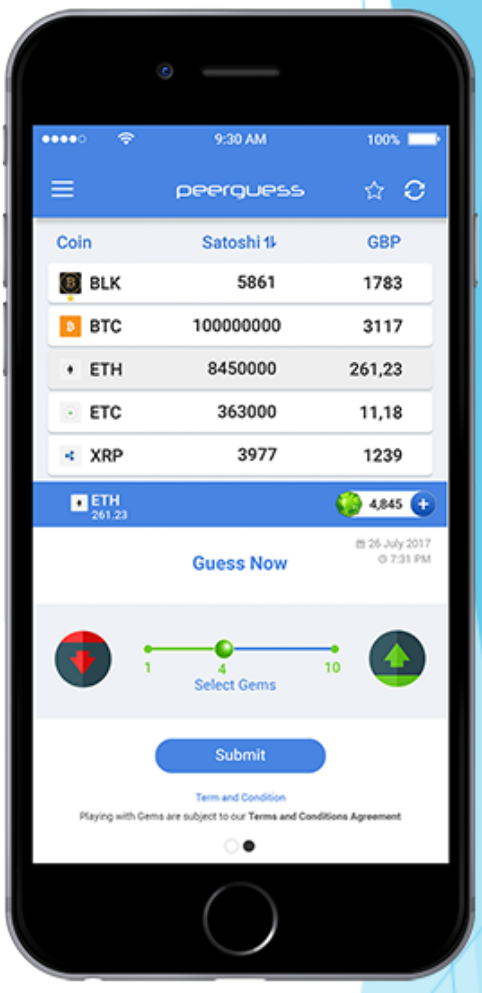
peerguess is a free application to track cryptocurrencies from various exchanges, create portfolio and alerts, designed to function applications like Coin Ticker, Blockfolio and/or crypto projects like CoinDash, DetectorToken, and Trackr. To become a game changer in the cryptocurrency world, peerguess is designed with gamification experience. We decided to add gamification principles to the watcher and portfolio management applications, in which you can guess the next 24h value of a specific cryptocurrency using the Gems provided or purchased.

From individuals to an ecosystem, **the power of the peerguess platform comes from creating a whole that is larger than the sum of its parts**. While users play with Gems and make guesses, these guesses will create a community thought, and as an output, you will be able to see what the community thinks about Bitcoin's (or any other altcoin) value in the next 24 hours. As a result, **the predictions of your own portfolio along with the whole cryptocurrency world will be visible to you**.

What are the unique features of peerguess?

We believe that, in short time, all cryptocurrency ticker and portfolio applications will be replaced by peerguess as it provides not just the common features all cryptocurrency followers have been looking for, but also a game to play even if you don't currently own any cryptocurrency.

As some of you know and as explained in sections below, it's not possible to introduce tokens as a payment method in AppStore. Therefore, we have created "Gems", which you will be able to convert them to ERC20 type GUESS Tokens over Ethereum platform. You will start with Gems given and you will either buy from the in-app purchase or convert GUESS tokens to Gems.

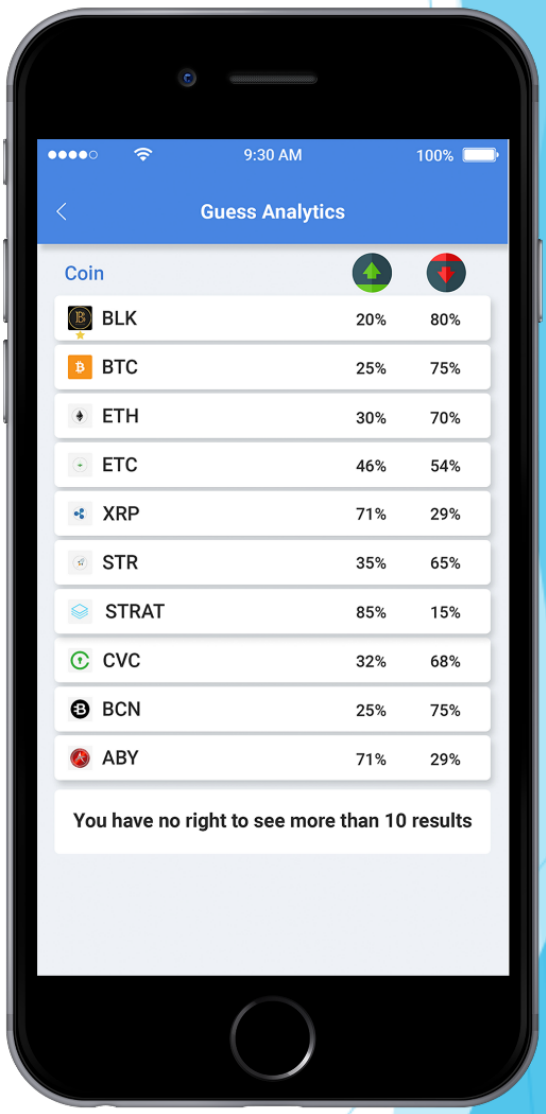


The gaming section will be simple at heart. You will set the amount of Gem you want to play with and you will click Up or Down buttons. For example, if the price for one Ethereum is $261 now, you will try to guess if it will be lower or higher than $261 after 24 hours. Playing the game, will also allow all users to train with Gems, and compare their predictions with the real-world data.

From that point forward, **our platform will analyze the Gem play data to provide sophisticated results**, reports and opportunities to make profit.

We have created four different modules by complexity:

- **Cumulative Guess Analytics (CGA)** will serve as the general opinion of the community. For example, you will see that 75% of peerguess users believe that BTC/USD will decrease in the next 24h.
- **Recommendation Engine (RE)** will:
  - Display a list of cryptocurrencies for users who predict both a cryptocurrency and another currency (like e-commerce recommendations).
  - Recommend currencies based on your prediction history and your segmentation.
- **Auto-Trade (AT)** will use the historical success rates and many other indicators to create triggers and parameters from the application and make trades on your chosen exchange/platform.
- **Stigmergic Quantitative Data (SQD)** will be based on Positive and Negative Guesses made, which can be filtered by Country, Time Zone, Language and many more data fields to assist you to understand the different dynamics on cryptocurrency world.



Other features that the peerguess platform will provide include;

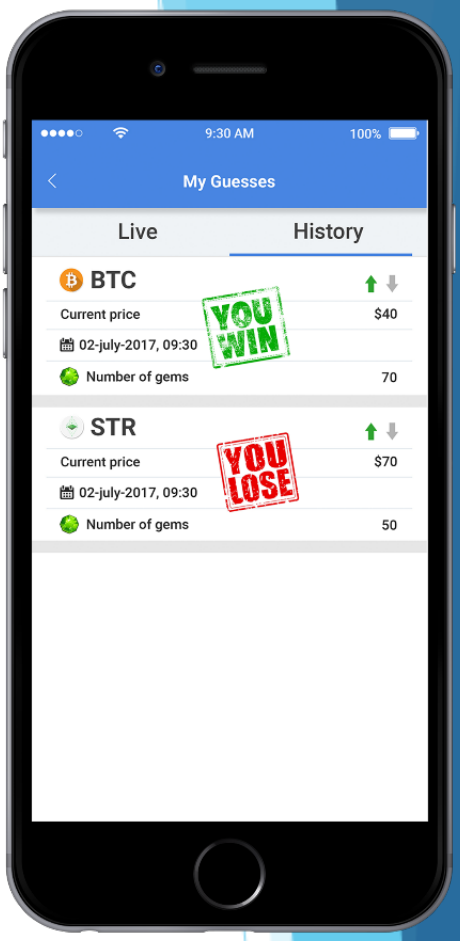
- Free price charts, without any limitations (1d, 5d, 1m, 3m, 6m, 1y or All from the beginning)
- Free cool blue theme and the dark theme (currently in development). All other future themes as we implement will also be free
- Ads removal is a one-time charge of $0.99

The following table summarizes the key differentiators between our application and other applications:

	PG	CT	BL
Guessing cryptocurrency's future	✓	×	×
Earn money	A	×	×
CGA	✓	×	×
RE, AT, SQD	A	×	×
News Section	A	✓	✓
Alerts Management	✓	×	✓
Portfolio Management	✓	✓	✓
Favorites Management	✓	✓	✓
Show Order Book	✓	✓	✓
Price History >3m	✓	$6.99/m	✓
Dark Theme	A	$6.99/m	✓
Ads Removal	$0.99[2]	$6.99/m	×

PG	Peerguess
CT	Coin Ticker
BL	Blockfolio
✓	The application supports the feature
×	The application doesn't support the feature
A	The feature is included in the project RoadMap

How will we use the Gems?

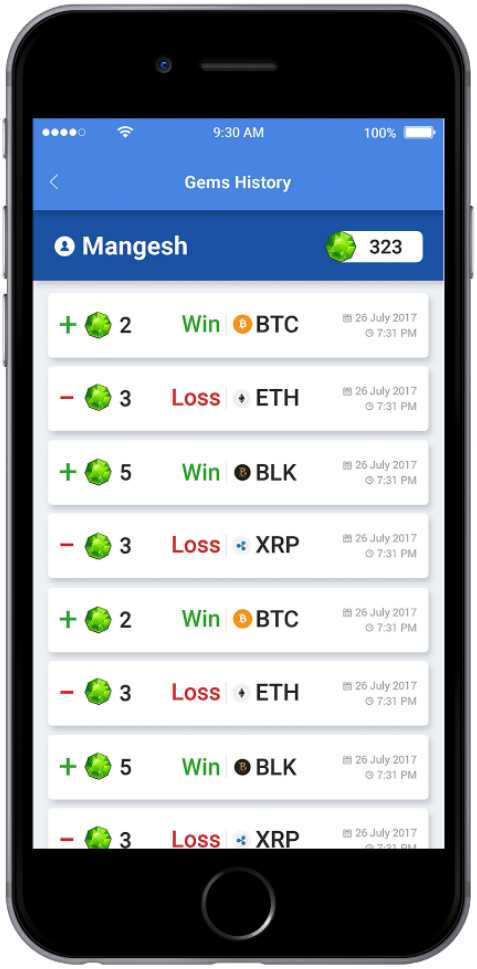


All new users are provided 100 Gems at start and are predicting the cryptocurrencies' future value in the next 24 hours by using the provided markets' average value. The predictions can be made with 1 to 10 Gems, which will be doubled for an accurate prediction at the end of the 24 hours.

Every 24 hours, we check the Gem balance and we deposit 10 Gems as a gift for the users with a zero Gem balance.

Also, In-App purchase is available to buy more gems.

The web version of the application will allow all users to convert Gems to GUESS tokens, which will transform the Gems earned in the game to a real-life value.



The GUESS tokens will be provided from our liquidation reserves. By limiting the Gems between a minimum of 1 and maximum of 10 within a 24-hour interval, we will ensure to prevent large payouts at early stages.

For the later stages, we are planning to raise the limits as high as possible, including short-term and long-term guesses and lower/higher multiplier options.

How will you implement tokens in the mobile world, what is your plan?

Due to restrictions imposed by Apple, it is currently not possible to introduce a currency that could be bought outside of the In-App Purchase system, nor it is possible to sell a feature or alike through something other than the In-App Purchase system. In other words, especially on the Apple side, we can't enable people to play with the tokens. Whereas we also know that if the application is cross platform, and the version you have does not promote the other one, Apple is not interested in users buying the Gems from somewhere else.

In short, we will have an In-App Purchase system for Apple and Google side, but we will also have Web, Facebook and other platforms in which we will introduce systems to convert Gems to Tokens and buy Gems with Tokens with super high discounts of more than 50%.

How will you get more people in?

As mentioned in many sections, we have four main features in the peerguess platform; which are Cumulative Guess Analytics, Recommendation Engine, Auto-Trade and Stigmergic Quantitative Data.

We know that for accurate results, we will need a large population of daily active users, and we need them to become a part of the decision-making process in our search to a basic question: "Will Bitcoin increase or decrease in the next 24 hours?". To facilitate this answer, we are bringing some of the gamification principles into the project and add Gems and Tokens to the system.

By following the gamification principles, we know that, in time, many users will enjoy competing with friends, family and with each other, and competition will attract more users via word of mouth advertisement. We are also dedicating a large budget for a targeted segment marketing to acquire innovators and early adopters.

What will you do to make data more reliable?

The idea of collective intelligence follows the idea of collective wisdom, which simply says “many heads are in general better than one”. Our unique data engine will collect data, analyze and report to form “Consensus Clustering”.

The idea of collective intelligence can be traced back to Aristotle and the philosophers of antiquity. One theoretical basis for collective wisdom can be derived from Condorcet’s Jury Theorem.

Condorcet's jury theorem is a political science theorem about the relative probability of a given group of individuals arriving at a correct decision. **The assumptions of the simplest version of the theorem are that a group wishes to reach a decision by majority vote**. One of the two outcomes of the vote is correct, and each voter has an independent probability p of voting for the correct decision. The theorem asks how many voters we should include in the group.

[1] Assuming that we raise necessary funds to get FX licensing.

Condorcet's jury theorem calculates the probability, P_N, that a jury gives the correct answer, given:

N = the number of jurors

p = the probability of an individual juror being right

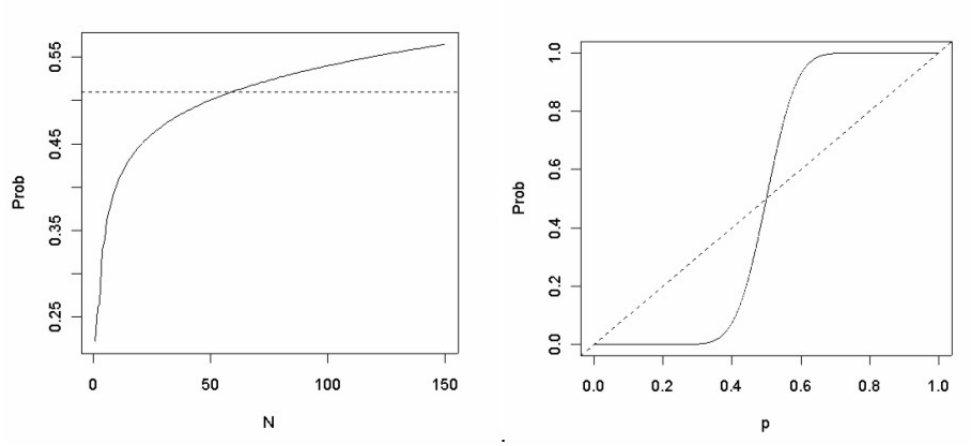
m = the number of jurors required for a majority

Condorcet’s jury theorem in its simplest form has the following formula based around the cumulative binomial distribution:

$$P_N = \sum_{i=m}^{N} \left(\frac{N!}{(N-i)!\,i!} \right) (p)^i (1-p)^{N-i}$$

Condorcet’s jury theorem assumes that all jurors are independent and with the same probability of being right. Condorcet’s jury theorem could be applied to our case as guessing theory, given the assumption

that there is a correct guess. When this is done, jurors are replaced with guessers.



The graph on the left shows P_N versus *N*, with p fixed at 0.51 and m chosen to be $\frac{N}{2} + 1$. The dashed line is horizontal at 0.51. Once the electorate size gets large enough, as long as people are right more often than they are wrong, the probability for the correct voting outcome is greater than an individual's probability of being right.

The graph on the right shows P_N versus p, with *N* fixed at 51 and m fixed at 26. The dashed line is where $P_N = p$. The graph shows that for a sufficiently large enough electorate, if $p \geq 0.5$ then $P_N \geq p$ and if $p \leq 0.5$ then $p \leq P_N$.

The graphs suggest that when an electorate is large enough, and individuals in that electorate are right more often than they are wrong, elections would act as a "truth tracker" which in our case would mean that if we have enough population to guess the currencies' in the next 24h, our platform will provide the best predictions possible to use with our Recommendation Engine, Auto-Trade and Stigmergic Quantitative Data modules.

We will be also using the theories and principles from Smarm Intelligence and Stigmergy, which is a consensus social network mechanism of indirect coordination through the environment (our application) between agents or actions (Gems and guessing). The principle states that the trace left in the environment by an action

stimulates the performance of the next action, by the same or a different agent. Consequently, **subsequent actions tend to reinforce and build on each other, leading to the spontaneous emergence of coherent, apparently systematic activity**. This is also where the blockchain architectures obtain their power from, and where we will get our power from.

Derived from the Jury Theorem, the Swarm Intelligence and the Stigmergy; we will be largely relying our back end, our data engine on Unanimous AI project, created by MIT. There are numerous reports and results about the project, which can be found on their website but let's dig one example as a point of reference;

Experts at the New York Times made predictions for the 2015 Academy Awards. These experts possessed far deeper knowledge than the novice members of the study. Still, the New York Times only showed a 55% success rate. Whereas a group of 7 novices, functioning as a social swarm, made predictions that surpassed industry experts, with 73%. Although not conclusive, this result suggests that social swarming may provide a means of achieving expert-level insights from groups of non-experts.

Our application will be even more than that as we will be creating a melting pot of novices and experts trying to guess the future. Meanwhile, they will create swarm intelligence, and at some point, **the end result of these guesses will create a consensus and thus a robust and reliable engine** to serve all who have access rights.

GUESS Token Structure

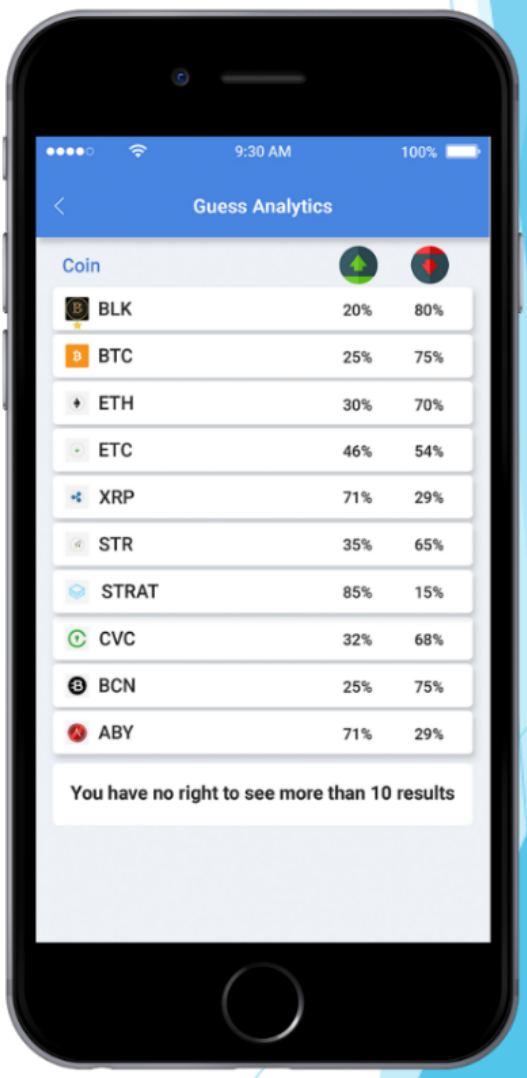
GUESS tokens are Ethereum based ERC20 tokens at its simple form. The total supply of GUESS token is non-re-issuable 200,000,000 of which 6,000,000 is bought during the ICO period and 2,000,000 is distributed as bounty rewards.

The funds raised during the ICO is invested in the further development of the project, as well as paying the marketing and maintenance costs for the infrastructure.

What are the privileges of holding GUESS tokens?

- You can buy Gems with more than 50% off AppStore price (depending on actual GUESS token market value).
- Every Sunday morning, we will distribute 100 Gems to all holders of the GUESS tokens for each $10 worth of GUESS tokens they kept for 7 days.

  For example, a token holder with 1,000 GUESS tokens with GUESS/USD = $0.05. The holder will receive 500 free Gems on Sunday morning.



What is your Road Map?

We believe that our potential for next phase developments are tremendous. For clear reasons, we prefer not to uncover excessive details for now. We would like to emphasize that we want to actively contribute to the cryptocurrency world and we consider it as a part of our mission to promote the decentralized thinking. Therefore, our Road Map is subject to minor changes along the way and there might be more features and ideas not mentioned here.

2017 Q4

- Ports: iPhone
- Modules: Cumulative Guess Analytics

2018 Q1

- Ports: Android, Web, Widgets
- Sections: Hall of Fame (Best Guessers), News, Achievements
- Major: Convert Gems to Tokens, Tokens to Gems
- Minor: Portfolio enhancements, Refer a friend, Language Support, Themes

2018 Q2

- Ports: Tablets (IOS, Android)
- Sections: Follow Users
- Modules: Stigmergic Quantitative Data

2018 Q3

- Sections: Create guess coupons, Top Coupons
- Modules: Recommendation Engine

2018 Q4

- Modules: Auto-Trade

Who are we?

The founder, Seyit Özgür, has years of experience in the internet and mobile gaming industry; he is currently employed by one of the most successful mobile game development company and also have deep knowledge on big data. Together with Mert Çavdar, Community Manager, our team has chosen to move forward with CDN Software Solutions Pvt. Ltd., India for application development to secure a more stable development and to ensure that we do not lose knowledge if we lose a developer.

We, as a team, have also experience and extensive knowledge about Bitcoin and altcoins. As veteran miners and hopeless traders, we purposed ourselves to fulfill a deep-seated need of the cryptocurrency community by creating a simple and engaging product with unique futures.

Management Team

Seyit Özgür
Co-Founder

Mert Çavdar
Community Manager

Development Team

Jaya Gehani
Project Manager

Mangesh Vyas
Developer

Kapil Prajapati
QA Engineer

Subhash Patidar
UIX Designer

Glossary of Terms

ICO: An Initial Coin Offering (ICO) used by startups to bypass the rigorous and regulated capital-raising process required by venture capitalists or banks. In an ICO campaign, a percentage of the cryptocurrency is sold to early backers of the project in exchange for legal tender or other cryptocurrencies, but usually for Bitcoin.

Bitcoin: A digital currency created in 2009. It follows the ideas set out in a white paper by the mysterious Satoshi Nakamoto, whose true identity has yet to be verified. Bitcoin offers the promise of lower transaction fees than traditional online payment mechanisms and is operated by a decentralized authority, unlike government-issued currencies.

Altcoin: Alternative cryptocurrencies launched after the success of Bitcoin. Generally, they project themselves as better substitutes to Bitcoin.

Cryptocurrency: A digital or virtual currency that uses cryptography for security. A defining feature of a cryptocurrency, and arguably its most endearing allure, is its organic nature; it is not issued by any central authority, rendering it theoretically immune to government interference or manipulation.

Blockchain: A type of distributed ledger, comprised of unchangeable, digitally recorded data in packages called blocks (rather like collating them on to a single sheet of paper). Each block is then 'chained' to the next block, using a cryptographic signature. This allows block chains to be used like a ledger, which can be shared and accessed by anyone with the appropriate permissions.

Stigmergy: The process by which the results of an insect's activity act as a stimulus to further activity.

Stigmergic: Of or pertaining to stigmergy.

References and Further Reading

A. Goder and V. Filkov. Consensus Clustering Algorithms: Comparison and Refinement. Proceedings of ALENEX, pages 109-117, 2008.

Lyle, J.A. Collective problem solving: Are the many smarter than the few? 2008.

Welinder, P., Branson, S., Belongie, S., and Perona, P. The multidimensional wisdom of crowds. In NIPS, 2010.

Pennock, D.M. and Sami, R. Computational aspects of prediction markets, 2007.

Woolley, A.W., Chabris, C.F., Pentland, A., Hashmi, N., and Malone, T.W. Evidence for a collective intelligence factor in the performance of human groups. Science, 330 (6004):686, 2010.

Yan, Y., Rosales, R., Fung, G., and Dy, J. Active learning from crowds. In ICML, 2011.

Rand, D. G., Arbesman, S. & Christakis, N. A. (2011) Dynamic social networks promote cooperation in experiments with humans. Proc. Natl Acad. Sci. USA 108, 19193–19198.

Pinheiro, F. L., Santos, F. C., and Pacheco, J. M. (2012). How selection pressure changes the nature of social dilemmas in structured populations. New J. Phys., 14(7):073035.

Santos, F. C., Pinheiro, F. L., Lenaerts, T., and Pacheco, J. M. (2012). The role of diversity in the evolution of cooperation. J. Theor. Biol., 299:88–96.

V. Filkov and S. Skiena. Heterogeneous data integration with the consensus clustering formalism. Proceedings of Data Integration in the Life Sciences, pages 110–123, 2004.

T.G. Dietterich. Ensemble methods in machine learning. Multiple classifier systems, pp.1–15, 2000.

L. Rokach. Ensemble-based classifiers. Artificial Intelligence Review, 33(1-2):1–39, 2010.

A. Strehl and J. Ghosh. Cluster Ensembles – A Knowledge Reuse Framework for Combining Multiple Partitions. Journal of Machine Learning Research, 3:583–617, 2002.

Unanimous AI Project: http://unanimous.ai/publications