CHALEARN Contest Rule for the

First ChaLearn Connectomics Challenge:

From imaging to connectivity

February 4, 2014

Official rules

Common terms used in these rules:

These are the official rules that govern how the "**First ChaLearn Connectomics Challenge: from Imaging to Connectivity**" contest promotion will operate. This promotion will be simply referred to as the "contest" or the "challenge" throughout the rest of these rules and may be abbreviated on our website, in our documentation, and other publications as "neural connectomics challenge", "ChaLearn connectomics challenge" or "connectomic challenge".

In these rules, "organizers", "we," "our," and "us" refer to CHALEARN and other sponsors or organizers, and, "participant", "you," and "yourself" refer to an eligible contest participant.

SECTION 1   Contest description

This is a skill-based contest and chance plays no part in the determination of the winner(s). The goal of the contest is **to reconstruct the structure of a neural network from temporal patterns of activities of neurons. The activities are obtained from video recording of calcium fluorescence imaging.**

Focus of the Contest: **This challenge will stimulate the advancement of research on network structure learning algorithms from observational neurophysiological data, including causal discovery methods.**

All eligible entries received will be judged using the criteria described below to determine winners.

SECTION 2   Tentative Contest Schedule
February 5, 2014: Start of the challenge (development period).
May 5, 2014: End of challenge.

May 20, 2014: All teams must turn in fact sheets. The three top ranking teams must turn in their code to qualify for prizes. The post-challenge verifications start.

June 1, 2014: End of the post challenge verifications. Release of the official ranking.

July 1, 2014: Paper submission deadline.

July 6-11, 2014: Result presentation at WCCI 2014, Beijing, China.

August 30, 2014: Revised papers due.

September 15 or 19, 2014: Workshop at ECML, Nancy, France. Discussion of the results.

To be notified of changes, please register to the causalitychallenge Google group.

SECTION 3   Eligibility

You are eligible to enter this contest if you meet the following requirements:

(a)   You are an individual or a team of people desiring to contribute to the tasks of the challenge and accepting to follow its rules; and

(b)   You are NOT a resident of any country constrained by US export regulations included in the OFAC sanction page http://www.treasury.gov/resource-center/sanctions/Programs/Pages/Programs.aspx. Therefore residents of these countries / regions are not eligible to participate; and

(c)   You are not an employee of CHALEARN; and

(d)   You are not involved in any part of the administration and execution of this contest; and

(e)   You are not an immediate family (parent, sibling, spouse, or child) or household member of an employee of CHALEARN, or a person involved in any part of the administration and execution of this contest.

This contest is void within the geographic area identified above and wherever else prohibited by law.

If you choose to submit an entry, but are not qualified to enter the contest, this entry is voluntary, and any entry you submit is governed by the remainder of these contest rules; CHALEARN reserves the right to evaluate it for scientific purposes. If you are not qualified to submit a contest entry and still choose to submit one, under no circumstances will such entries qualify for sponsored prizes.

SECTION 4   Entry

To be eligible for judging, an entry must meet the following content/technical requirements:

(a)   **Entry contents**: The participants will submit **prediction results** on **validation and test data** during the development phase. They receive feed-back during the development phase in their performance on validation data but will be judged on their performance on test data.

(b)   **Fact sheets**: To be part of the final ranking the participants will be asked to fill out a survey (fact sheet) briefly describing their method. Publishing a more detailed paper in the proceedings of the workshop is optional.

(c)   **Code submission**: To be eligible to receive their prizes, the candidates for prizes are required to publicly release their code under a license of their choice, taken among popular OSI-approved licenses (http://opensource.org/licenses) and make their code accessible on-line for a period of not less than three years following the end of the

challenge. The code must be uploaded to the Kaggle website or posted on the forum no later than 14 days after they are notified of the challenge results.

(d)   **Pre-requisite:** There is no pre-requisite to participate, including no requirement to have participated in previous challenges.

(e)   **Use of data provided:** All data provided by CHALEARN are freely available to the participants from the website of the challenge under license terms provided with the data.

      (1)   Test data:

The participants' final entry will be judged on their performance on test data.

      (2)   Training and validation data:

The contest organizers are making available to the participants a training dataset with truth values, and a validation set with no truth values. The validation data can be used by the participants for practice purposes to validate their systems. It will be similar in composition to the test set.

      (3)   Post-challenge analyses:

The organizers may also perform additional post-challenge analyses using extra data, but the results or such analyses will not affect the final ranking of the challenge performed with the test data.

(f)   **Submission:** The entries of the participants (predictions and code) will be submitted on-line via the Kaggle web platform. During the development period, the participants will receive immediate feed-back on validation data released for practice purpose on a "Public Learderboard". For the final evaluation, the results will be computed automatically on test data submissions. The performances on test data concealed on a "Private Leaderboard" visible to the organizers only during the challenge will not be revealed to the participants until the challenge is over.

(g)   **Original work, permissions:** In addition, by submitting your entry into this contest you confirm that, to the best of your knowledge:

      (1)   Your entry is your own original work; and

      (2)   Your entry only includes material that you own, or that you have permission from the copyright / trademark owner to use.

SECTION 5   Potential use of entry

Other than what is set forth below, we are not claiming any ownership rights to your entry. However, by submitting your entry, you:

(a)   Are granting us an irrevocable, worldwide right and license, in exchange for your opportunity to participate in the contest and potential prize awards, for the duration of the protection of the copyrights to:

      (1)   Use, review, assess, test and otherwise analyze results submitted, or produced by your code, and other material submitted by you in connection with this contest and any future research or contests sponsored by CHALEARN; and

      (2)   Feature your entry and all its content in connection with the promotion of this contest in all media (now known or later developed);

This license does not extend to methods, algorithms, source code used to generate your entry, unless you are one of the winners and have publicly disclosed them.

(b) Agree to sign any necessary documentation that may be required for us and our designees to make use of the rights you granted above;

(c) Understand and acknowledge that CHALEARN and other entrants may have developed or commissioned materials similar or identical to your submission and you waive any claims you may have resulting from any similarities to your entry;

(d) Understand that we cannot control the incoming information you will disclose to our representatives or our co-sponsor's representatives in the course of entering, or what our representatives will remember about your entry. You also understand that we will not restrict work assignments of representatives or our co-sponsor's representatives who have had access to your entry. By entering this contest, you agree that use of information in our representatives' or our co-sponsor's representatives unaided memories in the development or deployment of our products or services does not create liability for us under this agreement or copyright or trade secret law;

(e) Understand that you will not receive any compensation or credit for use of your entry, other than what is described in these official rules.

If you do not want to grant us these rights to your entry, please do not enter this contest.

SECTION 6   Submission of entries

(a) Follow the instructions on the http://connectomics.chalearn.org website to submit entries.

(b) The participants will be registered as mutually exclusive teams. Each team may submit only one single final entry. We are not responsible for entries that we do not receive for any reason, or for entries that we receive but are not functioning properly.

(c) The participants are subject to accept the terms of Kaggle, including the rules recapitulated in this section:

- **One account per participant**   You cannot sign up to Kaggle from multiple accounts and therefore you cannot submit from multiple accounts.

- **No private sharing outside teams**   Privately sharing code or data outside of teams is not permitted. It's OK to share code if made available to all players on the forums.

- **Public dissemination of entries**   Kaggle and the competition host have the right to publicly disseminate any entries or models.

- **Open licensing of winners**   Winning solutions need to be made available under a popular OSI-approved license in order to be eligible for recognition and prize money.

- **Winning solutions must be posted or linked to in the forums.**   Prizes will be awarded after the winners have posted their solutions to the competition forum. Winners must post or link to their solutions with seven days of the final competition deadline.

- **Team Mergers**   Team mergers are allowed and can be performed by the team leader. In order to merge, the combined team must have a total submission count less than or equal to the maximum allowed as of the merge date.

- **Team Limits**   There is no maximum team size.

- **Submission Limits** You can submit a maximum of 5 entries per day. You can select up to 1 final submission for judging.

(d) The participants must follow the instructions. We will automatically disqualify incomplete or invalid entries.

SECTION 7   Judging the entries

The board of CHALEARN will select a panel of judges to judge the entries; all judges will be forbidden to enter the contest and will be experts in causality, statistics, machine learning, or a related field, or experts in challenge organization. A list of the judges will be made available upon request. The judges will review all eligible entries received and select [three (3)] winners based upon the prediction score on test data. The judges will verify that the winners complied with the rules, including that they documented their method by filling out a fact sheet.

The entries will be ranked with the Area under the ROC Curve (AUC) rating the accuracy of classifying a potential neural connection (synapse) correctly as existent (positive value) or missing (negative value). We treat the prediction of neural connectivity as a classification problem: each potential synapse i ->j is classified into one of 2 classes: existent or non-existent. The score provided by the participants is understood as a discriminant value, larger values favoring the existence of a synapse. The AUC is equivalent to the area under the curve obtained by plotting sensitivity (success rate of the positive class) against specificity (success rate of the negative class) by varying a threshold on the prediction values to determine the classification result. The organizers will also analyze the methods results using other metrics, but this will not affect the final ranking.

The decisions of the judges are final and binding. The distribution of prizes according to the decisions made by the judges will be made within three (3) months after completion of the last round of the contest. If we do not receive a sufficient number of entries meeting the entry requirements, we may, at our discretion based on the above criteria, not award any or all of the contest prizes below. In the event of a tie between any eligible entries, the tie will be broken by giving preference to the earliest submission, using the time stamp of the submission platform.

SECTION 8   Prizes and Awards

(a) CHALEARN is the financial sponsor of this contest. There will be USD 3000 in prizes awarded as *incentive prizes* to boost contest participation.

(b) **Incentive Prizes**
First place: 500 USD and 1000 USD travel award (*) + Award certificate
Second place: 250 USD and 750 USD travel award (*) + Award certificate
Third place: 100 USD and 400 USD travel award (*) + Award certificate

(*) The travel award may be used for one of the workshops organized in conjunction with the challenge. The award money will be granted in reimbursement of expenses including airfare, ground transportation, hotel, or workshop registration. Reimbursement is conditioned on (i) attending the workshop, (ii) making an oral presentation of the methods used in the challenge, and (iii) presenting original receipts and boarding passes.

(c) **Best paper awards:**
CHALEARN may also sponsor best paper award(s) for papers submitted to the proceedings of the workshop, based upon the opinion of the reviewers, if additional sponsor money is available.

(d) **Travel awards:**
Other travel awards may be distributed to deserving participants, based upon merit and need, if additional sponsor money is available.

(e) If for any reason the advertised prize is unavailable, unless to do so would be prohibited by law, we reserve the right to substitute a prize(s) of equal or greater value, as permitted. We will only award one prize per team. If you are selected as a potential winner of this contest:

    (1) If your prize is not in cash, you may not exchange your prize for cash; you may not exchange any prize for other merchandise or services.

    (2) You may not designate someone else as the winner. If you are unable or unwilling to accept your prize, we will award it to an alternate potential winner.

    (3) If you accept a prize, you will be solely responsible for all applicable taxes related to accepting the prize.

    (4) If you are a minor in your place of residence, we may award the prize to your parent/legal guardian on your behalf and your parent/legal guardian will be designated as the winner.

SECTION 9 **Other Sponsored Events**

    (1) To stimulate participation, the organizers are making available several channels of scientific paper publication. Publishing papers is optional and will not be a condition to entering the challenge or winning prizes.

    (2) The results of the challenge will be published in the workshop proceedings.

The organizers may also sponsor other events to stimulate participation such as *Kaggle in class* student competitions.

SECTION 10 **Notifications**

If there is any change to data, schedule, instructions of participation, or these rules, the registered participants will be notified at the email they provided with the registration.

If you are a potential winner, we will notify you by sending a message to the e-mail address listed on your final entry within seven days following the determination of winners. If the notification that we send is returned as undeliverable, or you are otherwise unreachable for any reason, we may award the prize to an alternate winner, unless forbidden by applicable law.

Winners who have entered the contest as a team will be responsible to share any prize among their members. The prize will be delivered to the registered team leader. If this person becomes unavailable for any reason, the prize will be delivered to be the authorized account holder of the e-mail address used to make the winning entry.

If you are a potential winner, we may require you to sign a declaration of eligibility, use, indemnity and liability/publicity release and applicable tax forms. If you are a potential winner and are a minor in your place of residence, and we require that your parent or legal guardian will be designated as the winner, and we may require that they sign a declaration of eligibility, use, indemnity and liability/publicity release on your behalf. If you, (or your parent/legal guardian if applicable), do not sign and return these required forms within the time period listed on the winner notification message, we may disqualify you (or the designated parent/legal guardian) and select an alternate selected winner.

SECTION 11   On-line notification

We will post changes in the rules or changes in the data as well as the names of confirmed winners (after contest decisions are made by the judges) online on the website http://connectomics.chalearn.org. This list will remain posted for one year or will be made available upon request by sending email to causality@chalearn.org.

SECTION 12   Conditions. By entering this contest you agree:

(a)   To abide by these official rules;

(b)   To the extent allowable under applicable law, to release and hold harmless CHALEARN, their respective parents, subsidiaries, affiliates, employees and agents from any and all liability or any injury, loss, damage, right, claim or action of any kind arising from or in connection with this contest or any prize won save for residents of the United Kingdom, Chile, Korea, Greece, Brazil, Turkey, Hong Kong, France and Germany with respect to claims resulting from death or personal injury arising from CHALEARN's negligence, for residents of the United Kingdom with respect to claims resulting from the tort of deceit or any other liabilities that may not be excluded by law, and for residents of Australia in respect of any implied condition or warranty the exclusion of which from these official rules would contravene any statute or cause any part of these official rules to be void;

(c)   That CHALEARN's decisions will be final and binding on all matters related to this contest; and

(d)   That by accepting a prize, CHALEARN may use your team name, your name, and your place of residence online and in print, or in any other media, in connection with this contest, without payment or compensation to you. The declaration of eligibility, use, indemnity and liability/publicity release provided to the potential winner will make reference to obtaining his/her free consent to use his/her name and place of residence. In any case, the lack of such consent does not prevent the winner from receiving the prize.

(e)   This contest will be governed by the laws of the state of California, and you consent to the exclusive jurisdiction and venue of the courts of the state of California for any disputes arising out of this contest. For residents of Austria only: you may withdraw your submission from this contest within seven days of your entry. If you withdraw within seven days of entry, your submission will be returned to you, and we will not make any use of your submission in the future. However, you will not be eligible to win a prize. If you do not withdraw within seven days of entry, you will be bound by the provisions of these official rules. For residents of the United Kingdom only: the provisions of the contracts (rights of third parties) act 1999 will not apply to this agreement. For residents of New Zealand only: the provisions of the contracts (privity) act of 1982 will not apply to this agreement. For Quebec residents: any litigation respecting the conduct or organization of a publicity contest may be submitted to the Régie des Alcools, des Courses et des Jeux for ruling. Any litigation respecting the awarding of a prize may be submitted to the Régie only for the purpose of helping the parties reach a settlement. For residents of Israel only: this agreement does not entitle third parties to benefits under this agreement as defined in Chapter "D" of the Contracts Act (General Part) – 1973.

SECTION 13   Unforeseen event

If an unforeseen or unexpected event (including, but not limited to: someone cheating; a virus, bug, or catastrophic event corrupting data or the submission platform; someone discovering a flaw in the data or modalities of the challenge) that cannot be reasonably anticipated or controlled, (also referred to as force majeure) affects the fairness and / or integrity of this contest, we reserve the right to cancel, change or suspend this contest. This right is reserved whether the event is due to human or technical error. If a solution cannot be found to restore the integrity of the contest, we reserve the right to select winners based on the criteria specified above from among all eligible entries received before we had to cancel, change or suspend the contest subject to obtaining the approval from the Régie des Alcools, des Courses et des Jeux with respect to the province of Quebec.

Computer "hacking" is unlawful. If you attempt to compromise the integrity or the legitimate operation of this contest by hacking or by cheating or committing fraud in any way, we may seek damages from you to the fullest extent permitted by law. Further, we may ban you from participating in any of our future contests, so please play fairly.
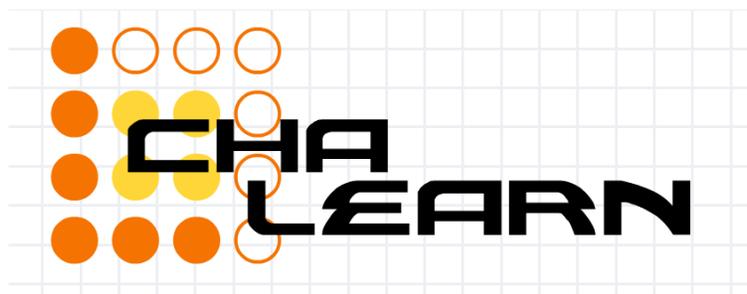
SECTION 14   Sponsor

ChaLearn is the sponsor of this contest.
955 Creston Road,
Berkeley, CA 94708, USA
causality@chalearn.org

Privacy

During the development phase of the contest and when they submit their final entries, contest participants do not need to disclose their real identity, but must provide a valid email address where we can be deliver notifications to them regarding the contest. To be eligible for prizes, however, contest participants will need to disclose their real identity to contest organizers, informing them by email of their name, professional affiliation, and address. To enter the contest, the participants will need to become users of the Kaggle platform. Any profile information stored on this platform can be viewed and edited by the users. After the contest, the participants may cancel their account with Kaggle and cease to be users of that platform. All personal information will then be destroyed. The Kaggle privacy policy will apply to contest information submitted by participants on the Kaggle platform. Otherwise, CHALEARN's privacy policy will apply to this contest and to all information that we receive from your entry that we receive directly from you or which you have submitted as part of your contest entry on the Kaggle platform. Please read the privacy policy on the contest entry page before accepting the official rules and submitting your entry. Please note that by accepting the official rules you are also accepting the terms of the CHALEARN privacy policy: http://www.chalearn.org/privacy.html.

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Certificate of acceptation of prize for the First ChaLearn Connectomics Challenge

Team name:

Contact name:

Address:

Country of residence:

Date of birth:

Email:

Rank in challenge:

Prize received:

By accepting this prize, I certify that I have read and understood the rules of the challenge and that I am a representative of the team authorized to receive the prize and sign this document.

To the best of my knowledge, all the team members followed the rules and did not cheat in participating to the challenge. I certify that team complied with all the challenge requirements, including that:

[- The team publicly released the source code of the software necessary to reproduce the final entry at [_____] under a license of [_____], taken among popular OSI-approved licenses (http://opensource.org/licenses). The code will remain publicly accessible on-line for a period of not less than three years following the end of the challenge.]

- The team filled out the requested survey (fact sheet) and, to the best of my knowledge, all information provided is correct.

I recognize that I am solely responsible for all applicable taxes related to accepting the prize (US nationals must fill out a W9 form and Foreign participants must fill out a W8BEN form).

I grant CHALEARN, and the contest organizers the right to use, review, assess, test and otherwise analyze results submitted or produced by our code and other material submitted by

you in connection with this contest and any future research or contests sponsored by CHALEARN and and the right to feature my entry and all its content in connection with the promotion of this contest in all media (now known or later developed).

CHALEARN may use the name of my team, my name, and my place of residence online and in print, or in any other media, in connection with this contest, without payment or compensation.

Name:

Date:

Signature: