

1 Collaboration and Evaluation Plan

The members of our team are: Computer Science: Yoav Freund, Electrical engineering: Piya Pal and Peter Gerstoft. Mathematics: Rayan Saab and Alex Cloninger.

- **PI Freund's** expertise is in Computational Learning Theory and Computer Science. Among his theoretical work are Boosting [], online learning [], learning and game theory [] and the RP-tree algorithm []. He has also worked on applications of machine learning to image analysis for biology [].

- please add yourself.

Description of how we shall collaborate

Joint Students

We will recruit and advise graduate and post-graduate students as a group. We will actively recruit students who have a strong mathematical background and are able and willing to implement algorithms as reusable code. Each student will have two advisors, from two of the three disciplines.

Collaboration

Each graduate student will have a one hour meeting with each other their advisors each week.

We will have a one and a half hour weekly group meeting, which will include all PIs and students, in each of which one of the students or PIs will present to the others.

Evaluation

We plan to submit paper to the following conferences and journals: COLT, ICML, AISTAT, JMLR, IEEE Signal Processing, IEEE Information theory, please add.

We Will implement our algorithms in python and jupyter notebooks and make them available through GitHub.

We will use several benchmarks to evaluate the accuracy. **Yoav : Piya, Peter, can you suggest benchmark data sets?**

We will collect audio data in Prof. Christiansen's instrumented living quarter and evaluate out algorithms on the collected data.

We will evaluate our performance in terms of:

1. number of publications.
2. number of implementations.
3. Performance of our methods on benchmark data.

Institute for Learning Sensor Networks

Yoav : Please suggest names for the institute

In phase II we plan to

We plan to join forces with researchers in the areas of embedded computers, robotics and medical sensing. All PIs are members of the Haligliou Data Science Institute (HDSI).