**Machine Learning Bootcamp Funded Training Opportunity**

**Preliminary Announcement - For updates see the course web page at https://www2.whoi.edu/staff/ckaiser/machine-learning-boot-camp/**

We invite experience Python programmers to attend a 3 day intensive introduction to machine learning.

**Activities and Format**

Machine Learning Bootcamp will consist of three full days of intensive instruction broken into six half day sessions. Each half day session will begin with a brief lecture and demonstration and then be followed up by several hours of hands-on, closely supervised learning activity where students will apply what they have learned to solve realistic problems a variety of tools

Students are expected to attend and fully participate in all six sessions as they are cumulative. Students are also expected to complete several hours of work prior to attending.

**When and Where?**

ML Boot camp will be October 21 - 23, 2019 in Clark 507. Exact times TBA but plan on all day.

**Why?**

Machine Learning is increasingly useful in nearly every field of human activity including Oceanography. WHOI currently has relatively few software engineers who are well versed in this critical topic. For the novice, the barrier to entry can seem quite high, especially when we are all so busy. This course seeks to leapfrog 15-20 WHOI engineers or research technical staff to the point where additional learning can occur in the course of a project.

**WHO**

This course is open to all active WHOI employees and students who meet the pre-requisites, However, funding for time to attend is only available to technical staff and space priority will be given to technical staff because the source of the funds are designated for technical staff. Pre-Registration via the application process is required even if you are not requesting funding. Salary support is available for approximately 16 attendees depending on the distribution of pay grades..

Pre-Requisites and Pre-Course Homework

The pre-requisites below were established after consultation with the instructor. Questions, clarifications, or requests for exception should be discussed with Carl Kaiser ([ckaiser@whoi.edu](mailto:ckaiser@whoi.edu) x3269) who will consult with the instructor if necessary.

* An intermediate understanding of Python (generally 2 courses, or a few months of intensive experience should suffice)
* A basic understanding of Matlab
* Command-line knowledge of Linux.

In order to make efficient use of the instructor’s and fellow students’ time, all participants will be asked to complete several tasks ahead of time including:

* Build up a laptop with a designated distribution of Ubuntu Linux
* Install a significant number of packages some of which are available via apt-get and some of which will have to be built from source

Detailed instructions will be provided, but a moderate knowledge of linux based computing will be necessary.

Participants who are funded are expected to receive approximately 4 hours of funded preparation time to complete these tasks in addition to their time for the course. It is likely that this may not entirely cover the total prep time required.

**Registration/Funding**

Pre-registration is required for all participants regardless of funding source. Please register by completing the form on the last page of this announcement. All registration forms should be e-mailed to [ckaiser@whoi.edu](mailto:ckaiser@whoi.edu) no later than 5pm EDT July 31, 201. Confirmation of attendance and award of funding is expected no later than August 9, 2019.

Attendance Criteria

All attendees meeting the pre-requisites are expected to be accepted into the class. In the unlikely and extreme circumstance that so many people are interested that the quality of instruction would be affected, it may be necessary to limit attendance, in which case the same criteria as used to select funded attendees will be used to limit attendance.

Funding

It is anticipated that funding is available for 16 people to attend. The exact number of funded attendees will vary slightly based on funds available and the pay grade of the people selected. Selection will be performed by a small committee of senior technical staff and will be based on the application form on the last page of this call. The selection criteria are:

* Does the applicant meet the pre-requisites?
* The funds for this activity derive from the “Technical Staff Training and Development Opportunities” opportunity and thus technical staff will have priority
* Attention will be given to diversity of department, lab, application, and seniority with the goal of getting broad participation
* The immediacy of any use or potential use of Machine Learning
* The degree to which the individual is routinely involved in software development or decision making about software development for their work at WHOI
* In close calls the degree to which a person is considered to be a lead adopter or trend setter may be considered

**Curriculum**



**Instructor**

Sam is a PhD candidate in the Computer Science Department at Brown University and has consulted internationally on applications of machine learning. His research is on the application of machine learning techniques to educational processes and making reinforcement learning data-efficient at scale. Sam has lectured and designed curricula and assignments for Brown's Machine Learning course, and has also published a video course on Artificial Intelligence for Small Businesses.

Machine Learning Bootcamp Application

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Official WHOI Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Department: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Additional PI’s for whom you do code development work \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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List your Python and Mattlab experience

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What are actual or potential uses of Machine Learning at WHOI that you envision working on?

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Anything else you wish to add?

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Do you agree to complete all pre-course homework and attend all six sessions (3days)? \_\_\_\_\_\_\_\_\_\_\_\_

Do you still wish to attend the class if we cannot provide funding? Note that this will NOT be used to determine who gets funded. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_