



Course title and number CS 689: Human Behavior Analytics
Term (e.g., Fall 200X) Spring 2017
Meeting times and location MWF 10:20-11:10 am, HRBB 126

Course Description and Prerequisites

This course covers hands-on applications of methods, algorithms, and systems that are able to model, quantify, and interpret human behavior. We will examine the integrated computational study of physical well-being, mental health, and human behavior through the use of both overt behavioral signal information (e.g. speech, language, gestures, facial expressions) and covert biomarkers (e.g. physiological signals). We will further see how integrated data scientific and context-rich bio-behavioral approaches can yield personalized measures of human behavior used for health, education, security, and other applications.

Prerequisites: No pre-requisites are stated. An understanding of machine learning (CSCE 633 or equivalent) and speech processing (CSCE 630) is recommended for project purposes.

Learning Outcomes or Course Objectives

- Students will be able to process human-derived signals (e.g. physiology, speech).
- Students will be able to associate bio-behavioral markers to clinical and non-clinical outcomes.
- Students will be able to identify and quantify predictive features for an application of interest relevant to affective computing.
- Students will be able to design projects that generate new findings and algorithmic contributions to the fields of behavioral signal processing and behavioral analytics.
- Students will be able to critically analyze state-of-the-art research papers including the experimental design, methodology, technical approach, and system.

Instructor Information

Name Theodora Chaspari
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Office hours Monday 11.30am-2pm
Office location 315D HRBB

Textbook and/or Resource Material

There is no textbook for this course. Research papers will be made available to students throughout the semester.

Grading Policies, Evaluation Weight, and Grading Scale

Presentations (15%): The instructor and students will make presentations on academic papers during the course of semester. The presentations will be evaluated for presentation of the paper methods, strengths, weakness, as well as highlight discussion points. All students will be expected to have read the papers prior to the presentation and participate in the discussions lead by the presenter and/or instructor.

Attendance and Participation (15%): Students are expected to participate in class discussions and, as such, attendance is mandatory. Absences will be handled according to student rule 7. For more information: <http://student-rules.tamu.edu/rule07>

Homeworks (40%): Students will work on homework assignments throughout the course of the

semester.

Project (30%): Students will work individually or in teams on projects that will be presented near the end of the semester. A final technical paper on the project will be due at the beginning of the final class meeting. Students will submit a project proposal for instructor review, present their proposed project to the class, and be assigned periodic project update presentations throughout the semester. Students may develop their own project or choose from a list of projects proposed by the instructor. Projects should focus on sensor and sensing design for personal clinical applications or clinical data modeling.

A = 90-100 B = 80-89 C = 70-79 D = 60-69 F = <60 %

Course Topics, Calendar of Activities, Major Assignment Dates

Class attendance is required. Students should report any known absence at least one class session prior. Any activities missed due to an unexcused absence cannot be made up without the instructor's approval.

The following schedule is tentative and may change (notice will be given).

Week	Material
1-2	Introduction and Overview; Signal Processing and Machine Learning
3-6	Behavioral analytics applications: health and well-being, education, entertainment
7	In-class data collection experiment
8	Subject privacy, confidentiality, and identifiable data
10	Behavioral analytics applications: cyber-security
11	Project Proposals Presentations
12-14	Advanced Topics: Latest Research and Project Update Presentations
15	Project Final Presentations and Reports

Americans with Disabilities Act (ADA)

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit <http://disability.tamu.edu>.

Academic Integrity

For additional information please visit: <http://aggiehonor.tamu.edu>

“An Aggie does not lie, cheat, or steal, or tolerate those who do.”

This course is interactive and collaborative by design. Students are encouraged to collaborate, share ideas, and use external resources when available. Credit **MUST** be given for external resources and help from others. Sharing or adopting the work of others (including, but not limited to, presentation slides, code, written reports, and ideas) without proper citation and credit can be interpreted as plagiarism or cheating. Students will be responsible for their own code and write up for assignments and projects, as well as slides for presentation. Use your best judgment in using outside resources and be mindful of the university integrity policies.