INF385K: Projects in Human-Computer Interaction  
Instructor: Dr. Jacek Gwizdka  
Syllabus – Spring 2018

Instructor: Dr. Jacek Gwizdka  
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Office Hours: By appointment  
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TA: Yung-Sheng Chang  
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Class meetings: Wednesdays 12pm-2:50pm, UTA 1.504  
Canvas @ UT: https://utexas.instructure.com/  
Course schedule: in Canvas  
Course Announcements: via Canvas (make sure to configure your Canvas settings to receive notifications about announcement and messages)

Note: The class meetings schedule, along with assigned readings, and assignment due dates is in a separate document.

COURSE DESCRIPTION

The spring 2018 edition of Projects in HCI (INF385K - 27280) will cover multiple aspects of conducting research projects in Human-Computer Interaction with a focus on user research methods in the lab equipped with a state-of-the-art eye-tracking and other devices. Topically, the course will emphasize methods for evaluating user experience and user interfaces. It will offer an opportunity to deepen your knowledge of usability testing and user interface evaluation and to sharpen your skills.

Class time will be split between content-based lectures (typically short), discussions, and project work. The part of class time used for lectures will be devoted to highlighting course materials. A few class meetings will be devoted to project work – the project will be the major student effort in this course. Student teams will be able to shape their own idea for the project within thematic constraints and challenges given by the instructor. Student projects will take advantage of the state-of-the-art eye-tracking equipment in the IX lab.

NOTE: Students taking this course are expected to have some previous experience in HCI gained either by having taken a course in HCI/UX/usability/IA or a related area, or by having an equivalent work experience. Please contact instructor before registering for this course.
OBJECTIVES

At the end of this course students will:

- further their HCI knowledge by applying it in new and practical situations;
- learn about eye-trackers and their use in UX research;
- learn how to combine a variety of evaluation methods (including eye-tracking);
- learn how to design and conduct user studies employing the above methods;
- apply this knowledge in a small-scale semester-long project;
- be prepared for further training and research in this area.

CLASS STRUCTURE and ORGANIZATION

The primary activity will be a semester-long, hands-on HCI research project. Student groups (1-3 students) will engage in selected stages of a typical HCI project, including identifying and understanding the problem, proposing evaluation plan, creating detailed research study protocol, executing it in the lab, and presenting the results. Student groups will be able to shape their own idea for the project within thematic constraints and challenges given by the instructor. The semester-long projects are expected to result in a thorough evaluation of some aspect of user experience with an existing software or web-based user interface. The results will be described in the final paper. The projects will be expected to produce results that are publishable in an international conference (such as, ACM CHI, ASIST, CHIIR, SIGIR, ETRA, UM, ICMI, IUI). The project is described in more detail in a separate document.

In addition to the project, the course uses readings, discussions, presentations and other activities in support of learning. The goal is to create a learning environment in the classroom where questions and concepts are discussed and analyzed and skills are developed collaboratively. This format requires participation of all class members. Students are expected to:

- Participate actively in the course project and in all group activities.
- Attend all class sessions; if a student misses a class, it is his or her responsibility to arrange with another student to obtain all notes, handouts and assignment sheets.
- Read all material prior to class; students are expected to use the course readings to inform their classroom participation and enable them to perform the class activities and assignments.
- Hand in all deliverables fully and on time. Late submissions will not be accepted unless an emergency is involved. In the event of an emergency, the student must contact the instructor as soon as possible. (see also Grading and Policies)
- Educate themselves and their peers. The successful completion of this course and their participation in the information professions depend upon the students' willingness to demonstrate initiative and creativity. Your participation in the professional and personal growth of your colleagues is essential to your success as well as theirs. Such collegiality is at the heart of professional practice. The in-class discussion of the assignments is designed to encourage this kind of collaboration.
- Participate in all class discussions.
- If needed, ask for additional help from the instructor or the Teaching Assistant.

HANDS-ON, PRACTICAL APPROACH
This course takes a practical, applied, hands-on approach, based on the application of established best practices, principles, and proven methods to ensure a quality user experience.

**MY PERSONAL GOALS FOR YOU IN THE COURSE**

In addition to content-specific objectives reflected by the topics in the course calendar, I have these personal goals for each student:

- to get you to think deeply and carefully about the subject,
- to help you to genuinely like the subject,
- to provide knowledge and skills useful to you in your career,
- to engender a deeper interest that can be pursued beyond this course,
- to make you proud of your achievements in this course, especially of your project work,
- and, hopefully, to have a little fun in the process 😊

**BOOKS AND READINGS**

Selected chapters will be assigned from the following books:


*Note*: Additional readings may be assigned as needed.

**CLASS LECTURE SLIDES**

The PDF versions of class lecture slides, if applicable, will be posted on Canvas. You have permission to print a copy for your personal use; please do not post or share them online. This policy applies to all other course handouts too.

**GRADING**

| Class participation (includes participation in class discussions) | 5.25% |
| Two assignments (5% each) | 10.5% |
| Eye-tracking paper discussion (in class) (once per semester) (team presentation) | 10.5% |
| Project (teamwork, unless otherwise noted) | **Project Subtotal**: 73.75% |
| P1: Proposal | P/F |
| P2: Initial evaluation plan | P/F |
| P3: Detailed research protocol (Canvas submission) | P/F |
| P4: Project presentation (poster) | 10.5% |
| P5: Final paper | 63.25% |
| **Course Total**: | **100%** |

*Note*: Intermediate project phases are not graded explicitly. However, you will be receiving feedback on your work along with assessment of how well you did.
GRADING SCALE

- 96 or above (A: superior), 90-95 (A-: distinguished)
- 87-89 (B+: good), 84-86 (B: satisfactory), 80-83 (B-: barely satisfactory)
- unsatisfactory: 77-79 (C+), 74-76 (C), 70-73 (C-).

Note: Final grading does not happen just by calculations. I take into account many factors, and so your “Canvas points/" are only a rough indication of the final grade. Ask when in doubt.

HOMEWORK

All assignments and project deliverable due dates are on the course schedule and in Canvas (under Assignments and Calendar). Even if the instructor doesn't announce each due date in class, it’s your job to know when you should be working on one and when they are due. Please ask when in doubt.

Submitting written homework and assignments

You must prepare your assignments using a word processor and submit it by uploading to Canvas by the due date/time. Please always use appropriate three- or four-letter file extensions in submitted filename (e.g., .docx for Word files, .pdf for Adobe portable document format. Please avoid submitting zip files). Assignments usually may not be submitted via email to either the professor or a TA.

Important: All documents that you are submitting should include on the front page of your submission your name (spelled in the same way as in the course roster), course number/name, instructor’s name, semester and the date of submission. For group work, if applicable, please also always include on the front page all group member names, your project group number, and your project short name (or title). Warning: If you do not follow these requirement, your submission may be returned without a grade and without a possibility to re-submit it.

Note: All students are expected to have completed IRB certification for conducting studies with human subjects (including financial conflict of interest (FCOI)). If you have not done it as a part of another class, the deadline for this course is listed on the course schedule.

CLASS PARTICIPATION

Class participation includes active participation in lectures, presentations (Q&A) and in classroom discussions.

CLASS POLICIES

Due dates and times for handing in homework and project assignments

Unless otherwise indicated, all homework and project assignments must be turned in at the beginning of class on the due date. You should think of all due dates for assignments, especially project assignments, as firm. The tight schedule of deliverables throughout the whole semester makes it nearly impossible to slip or extend due dates. Any assignment that you do not hand in on time may be penalized in grading. If you are not able to complete an assignment by the due date, it would be best for you to hand in as much of it as you have done. You must prepare your assignments using a word processor and submit it by uploading to Canvas by the due date/time. Please do not submit links to Google Docs. Assignments usually may not be submitted via email to either the professor or a TA.

Attendance
You will not be graded directly on attendance. You are adults in a graduate-level course and are expected to attend every class. Beyond the occasional need to be absent from class for a good reason, please consider that much of the learning for the course occurs in class. You cannot participate in this learning if you are not present.

If you have to miss class for an extended period due to a protracted illness or similar reason, we will treat your needs as a special case and I will do everything I can to help you survive.

Computer use in the classroom

You may use your laptops and other computing devices (e.g., tablets, smartphones) in the classroom. However, their use during class time is restricted to class related activities. Students who use their devices for non-class related activities will be excused from the class and will have points deducted for their final grade.

Plagiarism & Academic Honor Code

Plagiarism, as defined in the 1995 Random House Compact Unabridged Dictionary, is the "use or close imitation of the language and thoughts of another author and the representation of them as one’s own original work." (as cited in Plagiarism (2017). Wikipedia, https://en.wikipedia.org/wiki/Plagiarism). If you use words or ideas that are not your own you must cite your sources. Otherwise you will be guilty of plagiarism. Here’s a resource designed to help you avoid plagiarism: www.lib.utexas.edu/plagiarism

You are encouraged to discuss assignments with classmates, but anything submitted must reflect your own, original work. If in doubt, ask the instructor. Plagiarism (as described above) and similar conduct represents a serious violation of UT’s Honor Code and standards of conduct:

- http://deanofstudents.utexas.edu/sjs/conduct.php

It is YOUR RESPONSIBILITY as a student to avoid honor code violations. Neither ignorance nor accidents excuse violations. If in doubt, ask the instructor and/or err on the side of caution by quoting borrowed text and citing sources of borrowed ideas and text.

Students who violate University rules on academic dishonesty are subject to severe disciplinary penalties, such as automatically failing the course and potentially being dismissed from the University. **PLEASE** do not take the risk. We are REQUIRED to automatically report any suspected case to central administration for investigation and disciplinary hearings. Honor code violations ultimately harm yourself as well as other students, and the integrity of the University, academic honesty is strictly enforced. For more information, see the Student Judicial Services site: http://deanofstudents.utexas.edu/sjs.

Notice about students with disabilities

The University of Texas at Austin provides appropriate accommodations for qualified students with disabilities. To determine if you qualify, please contact the Dean of Students at 512-471-6529.
or UT Services for Students with Disabilities. If they certify your needs, we will work with you to make appropriate arrangements. UT SSD Website: [http://www.utexas.edu/diversity/ddce/ssd](http://www.utexas.edu/diversity/ddce/ssd)

Coping with stress and personal hardships

The [Counseling and Mental Health Center](http://www.utexas.edu/diversity/ddce/ssd) offers a variety of services for students, including both individual counseling and [groups and classes](http://www.utexas.edu/diversity/ddce/ssd), to provide support and assistance for anyone coping with difficult issues in their personal lives. As mentioned above, life brings unexpected surprises to all of us. If you are facing any personal difficulties in coping with challenges facing you, definitely consider the various services offered and do not be shy to take advantage of them if they might help. These services exist to be used.

Notice about missed work due to religious holy days

A student who misses an examination, work assignment, or other project due to the observance of a religious holy day will be given an opportunity to complete the work missed within a reasonable time after the absence, provided that he or she has properly notified the instructor. It is the policy of the University of Texas at Austin that the student must notify the instructor at least fourteen days prior to the classes scheduled on dates he or she will be absent to observe a religious holy day. For religious holy days that fall within the first two weeks of the semester, the notice should be given on the first day of the semester. The student will not be penalized for these excused absences, but the instructor may appropriately respond if the student fails to complete satisfactorily the missed assignment or examination within a reasonable time after the excused absence.

Electronic-mail Notification Policy

In this course e-mail will be used as a means of communication with students. You will be responsible for [checking your e-mail regularly](http://www.utexas.edu/its/policies/emailnotify.html) for class work and announcements. If you are an employee of the University, your e-mail address in Canvas is your employee address.

All email concerning the class should be addressed to the TA with a copy to the instructor. We will sort out which of us should act on the message and will make every effort to answer your email in a timely fashion. However, you should not necessarily always expect to get an immediate reply. In particular, don’t expect to get answers to questions about a homework or project assignment within the last few hours before that assignment is due.

Please put INF385K-HCI as part of the subject line of your email; that will help us identify your emails more quickly.

The University has an official e-mail student notification policy. It is the student’s responsibility to keep the University informed as to changes in his or her e-mail address. Students are expected to check e-mail on a frequent and regular basis in order to stay current with University-related communications, recognizing that certain communications may be time-critical. Read the policy: [http://www.utexas.edu/its/policies/emailnotify.html](http://www.utexas.edu/its/policies/emailnotify.html). You can find and change your official email address of record at [https://utdirect.utexas.edu/apps/utd/all_my_addresses](https://utdirect.utexas.edu/apps/utd/all_my_addresses).
### INF385K: Projects In HCI – Instructor: Dr. Jacek Gwizdka

**Course Schedule** (subject to *change*) – Spring 2018

<table>
<thead>
<tr>
<th>#</th>
<th>Date</th>
<th>Topic</th>
<th>Readings / Tutorials (to read/watch <em>before</em> class)</th>
<th>In class activity</th>
<th>Due - Project deliverables... (due at the beginning of class, except as indicated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jan 17</td>
<td>Introductions</td>
<td>Syllabus</td>
<td>Introductions</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Jan 24</td>
<td>HCI Research Design</td>
<td>SMK: 4-5</td>
<td>Reading discussion</td>
<td>Present Human Behavior (p.I&amp;IV)</td>
</tr>
<tr>
<td>3</td>
<td>Jan 31</td>
<td>Eye-tracking: Fundamentals</td>
<td>JBAS:1-2, AB:1-3 online tutorial/video</td>
<td>Reading discussion</td>
<td>Present eye-tracking tutorial</td>
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<td>Eye-tracking paper</td>
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<td>Discuss project proposals</td>
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<tr>
<td>4</td>
<td>Feb 7</td>
<td>Eye-tracking: study design</td>
<td>AB:4-7, SMK: 6 online tutorial/video</td>
<td>Eye-tracking paper</td>
<td>Reading discussion</td>
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<td></td>
<td>Discuss project progress</td>
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<tr>
<td>5</td>
<td>Feb 14</td>
<td>Eye-tracking in usability, web users</td>
<td>JBAS:3,6-8</td>
<td>Eye-tracking paper</td>
<td>Reading discussion</td>
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<td></td>
<td>Discuss project progress</td>
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<tr>
<td>6</td>
<td>Feb 21</td>
<td>Eye-tracking: conducting a study</td>
<td>AB:8,9</td>
<td>Eye-tracking paper (2)</td>
<td>Reading discussion</td>
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<td></td>
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<td>IX lab: eye-tracker use</td>
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<tr>
<td>7</td>
<td>Feb 28</td>
<td>Other biometric methods</td>
<td>JBAS:4 online tutorial/video</td>
<td>Discuss methods</td>
<td>Present biometric tutorials (3)</td>
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<td>Eye-tracking paper</td>
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<tr>
<td>8</td>
<td>Mar 7</td>
<td>Mid-term project presentations</td>
<td></td>
<td>Eye-tracking paper</td>
<td>Informal presentations &amp; discussions</td>
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<td>A3: Facial expressions</td>
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<tr>
<td>9</td>
<td>Mar 21</td>
<td>Eye-tracking: Data extraction and preparation for analysis</td>
<td>AB:10-11</td>
<td>Eye-tracking paper</td>
<td>Reading discussion</td>
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<td>IX lab: eye-tracking software</td>
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<tr>
<td>10</td>
<td>Mar 28</td>
<td>Eye-tracking: Data analysis</td>
<td>AB:12-13</td>
<td>Eye-tracking paper</td>
<td>Reading discussion</td>
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<td></td>
<td>Project progress will be periodically checked</td>
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<tr>
<td>11</td>
<td>Apr 4</td>
<td>Project</td>
<td></td>
<td>Project work</td>
<td></td>
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<tr>
<td>12</td>
<td>Apr 11</td>
<td>Project</td>
<td></td>
<td>Project work</td>
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<tr>
<td>13</td>
<td>Apr 18</td>
<td>Project</td>
<td></td>
<td>Project work</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Apr 25</td>
<td>Writing up research</td>
<td>SMK: 8</td>
<td>Reading discussion</td>
<td>Project work</td>
</tr>
<tr>
<td>15</td>
<td>May 2</td>
<td>Final project presentations</td>
<td></td>
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</tbody>
</table>

*Dr. Gwizdka away at an academic conference.*


**Note**: Additional readings may be assigned as needed.
**TEAM PROJECT**

The major effort in this course is the semester-long project. Early in the semester, students will form teams and define their projects within thematic constraints and challenges given by the instructor. Teams will work on their projects throughout the semester. Like with real life projects, it's hard to foresee all issues you may encounter in your project work. Hence, the project deadlines may need to be adjusted accordingly. Please keep this in mind. The semester-long projects are expected to result in a novel evaluation of some aspect of user experience with an existing software or web-based user interface (or similar). The results will be described in the final paper. The projects will be expected to produce results that are publishable in an international conference. A publication co-authored with the instructor is expected from PhD students taking this course; for other students, it is optional. Students who aim to publish should have IRB certification and should obtain IRB approval for their study.

The project focus may be, for example, on evaluation of an existing software or web-based user interface, on comparing two existing interfaces, on understanding user experience with an existing system, on understanding user performance of selected types of user tasks. Examples of past projects are provided on Canvas.

The project will include several phases, including identifying and understanding the problem, designing user study, conducting user study with participants, analyzing data, and, finally, presenting the results and conclusions.

**0. Project Teams**

Students will form project teams of two to three students. Occasionally, exceptions to the team size can be made. For example, PhD students may work on their projects individually.

**1. Project Proposal**

Your project will be driven by a problem or a research question you are proposing to address. Project proposal should include a short description of the problem and the research question(s) you will be addressing. Include motivation. It will be useful if you provide brief support your project's motivation by referring to prior work (related literature), this part will be extended in the next project submission.

**2. Related work and preliminary evaluation plan**

This phase will involve extending related work, finalizing research questions and planning your lab experiment design.

*Expected sections in your submission:* Introduction and Motivation. Research Questions (both potentially revised from P1); Related Work; Method (initial elements of experimental design: stimuli description, tasks, procedure (some elements). Research Questions can also come after Related Work if it informs them. You may want to start formulating hypotheses.

**3. Detailed research protocol**

Based on feedback received on your evaluation plan, this phase will involve finalizing experiment design and all needed materials, and submitting research protocol to Canvas. PhD students (and other who want to publish) are expected to submit their research protocols and consent forms to IRB for approval.
Expected sections in your submission: Revision of any previously submitted sections, if applicable. Complete Method section (experimental design, stimuli description, tasks, procedure, measures (independent and dependent variables).

The teams will **conduct their user study in the IX lab with human subjects**. This will be the major part of project effort. There is no separate project deliverable from this part, but we will be checking progress of team efforts. Subsequently, the results will be analyzed and written up for the final presentation and submission.

4. **Project presentation**

Each group will present their project during the last class meeting and *(optionally)* as a part of the iSchool’s Open House. *(see appendix for more info)*

4.1. **Presentation guidelines**

Prepare a poster presentation of your project. Your poster will use material from the final project report. Feel free to draw as much of the poster content as you wish from the report (your selection of the most important points and illustrative images will be part of the grade). Your poster should look professionally and be prepared with presentation software *(e.g. PowerPoint)*. Use bullet points and not lots of narrative text. Graphics and visual elements are preferred over text. You will be able to print your posters in the IT lab at the iSchool. More poster formatting and printing details will be provided later.

5. **Final paper**

The purpose of the final paper is to show the students’ capacity to communicate their work in a professional way. It must be scholarly structured using sections such as Abstract, Introduction, Related Work, Method, Results, Discussion and Conclusions. The report must have a coherent story and convincing argumentation that explains:

1. What is the problem that the project addresses? *(Introduction)*
2. Why is it important? *(Motivation)*
3. What have other people done in this area? *(Related Work / Background)*
4. What are your research questions (RQs) or hypotheses?
5. What is your approach and method? *(Procedure, Participants, Data collection method(s))*
6. How have you analyzed the data? *(Include if justified to have a separate Data analysis section)*
7. What are the findings? *(Results)*
8. What have you learned? How do your findings relate to RQs? *(Discussion)*
9. What are the major contributions and limitations of your project *(Conclusions)*

The sections may differ between the projects.

It is expected that the final paper will be publishable at a major international conference *(such as ACM CHI, JCDL, ASIST, UIST, IUI, ETRA, ICMI, or ASSETS)*. As such, the reports must follow the specifications set by the particular conference, including using the appropriate format. The final paper should be 8 to 10 pages long in the two-column ACM conference paper format *(use the ACM Proceedings template: [http://www.acm.org/publications/proceedings-template](http://www.acm.org/publications/proceedings-template))*. The paper needs to have an appropriate number of references *(usually 10-30)*.

In addition to submitting the final paper, please submit a separate document with appendices. The appendices should contain selected elements from earlier submissions. Include also several larger size images from your evaluation of the prototypes that do not fit into a two-column paper.
Appendix – Optional Participation in the iSchool’s Open House Project Presentations

The iSchool’s Open House (May 4, 2018, 1-4pm) is an optional opportunity to present, showcase, and demo student projects, including projects from this course, to hundreds of visitors and employers who visit the school for the event. Students interested in presenting projects will need to submit a brief 1-2 paragraph proposal by March 30, 2018 (look out for the deadline and upload link via announcement emails or contact Beth Hallmark at beth.hallmark@ischool.utexas.edu).

• Proposals should cover the following elements: 1) A clearly stated objective and an overall description of the work to be performed or demonstrated; 2) The deliverables, outcomes or the expected culminating products and the methods you will employ to achieve these outcomes; and 3) An explanation of how the project fits into your education (learning objectives) and professional goals.

• Proposals are subject to review by the Open House Committee to ensure a professional presentation that represents the iSchool well. NOTE: You will have an opportunity to withdraw your proposal by April 13 if you don’t think the project will be ready in time.

• Student projects can be displayed at the Open House in a wide variety of formats (iPads, laptops, screens, physical objects, art – posters are NOT required). A number of electrical outlets will be available and students will request all technical needs when they submit project proposals (by March 30). Remember to talk with the IT Lab about borrowing equipment early on and reserve any equipment needed in advance.

• Think big! Students have acquired internship and job offers via the work they have showcased at Open House. At a minimum, it’s a powerful networking opportunity.
Assignment 1 - Use eye tracking data to determine ad effectiveness.

Your task: Compare two different print advertisements that you choose. Based on eye tracking data analysis (e.g. heatmaps and areas of Interest), determine which of the two advertisements is more effective. You choose the print ads you want to compare. You can compare two different ads for all respondents or between two population target segments like young, old, male or female.

State a hypothesis. For example, “The Chamonix ad is more effective than the Fuji ad for the Old Segment.” Then, provide evidence to support your hypothesis using analysis based on the eye tracking data. Use visuals like pictures of heatmaps and areas of interest. Ad effectiveness can be defined here as attention attraction by the most important AOI's. You can select most important AOI's based on your intuition. Some example AOI's are listed on the next page.

Some questions you should consider answering to support your hypothesis include:

- Which image elements attract immediate attention?
- Which elements attract above-average attention?
- Which elements are being ignored or overlooked?
- Which order are the elements noticed?
- How does one ad compares to another?

Study data: The study to use is “Print Advertisements - Trawell” on the iMotions platform.

Modules: This assignment should be done after reviewing the “Eye Tracking Tutorial” in the "iMotions - Introduction to Eye Tracking” course.

Notes
Once you are in the study and on the “Heatmap” tab, use the “Stimuli” menu to select two different print ads. You can compare two stimuli side by side by clicking on “Compare 2 Stimuli” text at the bottom of the “Stimuli” menu. Use the “Segments” menu to choose a target segment. To begin your analysis, answer these questions about the two advertisements you’ve chosen:

1. In what aspects does the allocation of visual attention differ between the two ads?
2. Do different segments of customers look at these advertisements differently?

Heatmaps are a method of visualizing eye tracking data. When you just look at the two heatmaps and compare the locations of "hot" and "cold" areas, that is a qualitative analysis - it is not sufficient for hypothesis testing. The comparison of heatmaps provides qualitative insights and you should include these in your analysis in the assignment.

To compare the advertisements quantitatively, you’ll use areas of interest. Choose the “Areas of Interest” tab on the Study Page of iMotions. Use the “Add AOI” button to create areas of interest. You can move the AOI and it’s corners using your mouse. You can create new points for the AOI using <alt-click>. You can see the data for the AOI as well as rename it in the table below the stimuli.
Some relevant AOI’s would be logo, website name, headline, slogan, text, human figures and faces. Use the following metrics to compare your ads.

1. **Time to First Fixation (TTFF)**. The average time it took respondents to look at the area for the first time, counting only respondents who actually looked at it.

2. **Time spent**. The average time spent looking at the area, counting only respondents that actually looked at it.

3. **Visit ratio**. The ratio of respondents that looked at the area at least once.

4. **Revisit ratio**. The ratio of respondents that looked at the area more than once, counting only those that looked at it for 100ms or more at least once.

Use these questions to drive your argumentation:

- Which ad is more effective among your chosen target group and with regards to your objective? Why?
- Which ad should be published online or in a magazine? Why?

**Submission.**
Submit a two to four pages with description of your findings to Canvas.

**Note**: this assignment is based on original assignment created by iMotions for their Learn platform.
Assignment 2 - Use facial expression data analysis to determine reactions to funny video commercials.

Assignment.
There are 3 funny commercials in this assignment. Each one was watched by an equal number of men and women. Their facial movements were coded into emotional responses using Emotient's algorithm (FACET).

Watch all 3 ads. Compare the facial expression data between men and women in all three. Find a scene in each ads where there appears to be a difference between men and women's emotional response to the ads. What are the differences? Why do you think these differences are shown in the data? Try to explain why you draw these conclusions.

State a hypothesis for one of the three ads you watched. For example, “The scene in the VW ad with the woman at the desk with lots of paper is more favorably received by women than men.” Then, provide evidence to support your hypothesis using analysis based on the facial expression data. Use visuals like pictures of signal graphs and/or tables from the raw data.

Study.
The study to use is “Facial Expression Assignment” in the iMotions platform.

Modules
This assignment should be done after reviewing the “Facial Expressions Tutorial” in the iMotions “Introduction to Biometrics Methods” course.

Notes
Once you are in the study, choose the “Signals” tab. Use the “Stimuli” menu to select different ads. Use the “Segments” menu to compare both the Male and Female segments.

Submission.
Submit a two-three pages with description of your findings to Canvas.

Note: this assignment is based on original assignment created by iMotions for their Learn platform.