Georgia Institute of Technology
CS6150 Computing for Good (C4G) Course Syllabus

OMSCS Spring 2022, College of Computing
Delivery: 100% Web-Based
Dates course will run: January 10, 2022 – May 5, 2022

Instructor Information

Course Instructor: Santosh Vempala	Email: vempala@cc.gatech.edu
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General Course Information
Description

How can computing help make the world a better place? Can we avoid wars, alleviate homelessness, and improve global health using computers? What are the technical challenges that arise, and what humanistic issues must be considered and understood in the process? In this C4G course, we explore problems faced by developing countries and underserved populations from a computing perspective. The course will be project-centered with teams of students choosing project topics early in the course and working towards a deployed solution by the end of the course.

Pre-Requisites

Graduate course in any **ONE** of the following topics: **(A)** Databases, **(B)** Networking, **(C)** Logistics, **(D)** Web development, **(E)** Global Health, **(F)** Technology and Society, or **(G)** User Interface Design.

Course Goals and Learning Outcomes
Once completed, the students should have the following capabilities:
- Think about computing for social good and all its complexities
- Undertake a significant, semester-long project working on a team: Identify a problem/project/organization that you are passionate about; design, evaluate and deploy a solution
- Develop a rudimentary understanding of a domain of social importance
- Develop an understanding of the key issues in humanitarian computing, including sustainability, resource availability (or lack thereof), novice user design, and diversity in user and stakeholder populations

Course Materials
Course Text
Geek Heresy by Kentaro Toyama (please click link, then scroll to page bottom for digital versions)

Additional Materials/Resources
All other required and recommending reading will be provided as PDFs on Canvas. Outside materials and technologies required are dependent on each project's individual needs.

Course Website and Other Classroom Management Tools
All course materials and videos are located on Canvas.
C4G Public Website: c4g-dev.cc.gatech.edu

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Course Requirements, Assignments & Grading
Assignment Distribution and Grading Scale

Assignment	Weight	Description
Assignment 1: Skills & Interests Exercise	**1%**	
Assignment 2: Tech Survey	**4%**	
Lecture Assessments	**10%**	
Midterm Paper	**15%**	
Project (total)	**60%**	
Initial Goals (individual)	**2%**	Indicate topic or area of interest, type of project, potential partner organization(s), potential project(s), and what makes you suitable for it.
Team Formation	**3%**	Form a team, listing all appropriate skills and experience of team members. If you prefer to go solo, be sure to discuss with TA.
Team Goals & Deliverables	**5%**	Select partner organization. Discuss their needs and formulate project. Make a list of goals and list of deliverables. Plan for how to engage partner organization and any other stakeholders.
Mini-Presentation (to TA)	**5%**	Present Project plan to TA. Create slides with details on team, partner organization, project goals, and plan.
Team Webpage	**5%**	Create a project webpage and announce to the class.
Initial Evaluations (with partner organization)	**10%**	Create survey and evaluate initial prototype with partner and stakeholders.
Demo (present to TA)	**10%**	Present functional demo to TA and implement TA feedback.
Field Evaluation	**10%**	Evaluate deployable version with partner and make changes based on feedback. Deploy or produce deployment plan. Make sustainability analysis.
Final Report	**5%**	Include the problem being addressed with detailed background information about users and stakeholders, current approaches, their shortcomings, and challenges to be addressed. It should then motivate and present the solution developed, its evaluation and deployment, and a sustainability analysis.
Final Presentation (recording)	**5%**	Create slideshow and video recording.
Peer Project Evaluations	**10%**	

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Grading Scale
Your final grade will be assigned as a letter grade according to the following scale:
A   90-100%
B   80-89%
C   70-79%
D   60-69%
F   0-59%

Assignment Due Dates
All assignments are due at 11:59:00pm EST, unless otherwise noted. All assignments are due relative to the Eastern Standard Time Zone (EST). Eastern Standard Time is UTC -5. Eastern Daylight time is UTC -4. We will not accept assignments submitted late due to time zone issues. You should update your canvas to account for EST if you are in a different time zone. There are no exceptions.

Late and Make-up Work Policy
There will be no make-up work provided for missed assignments. Of course, emergencies (illness, family emergencies) will happen. In those instances, please contact the Dean of Students office. The Dean of Students is equipped to verify emergencies and pass confirmation on to all your classes. For consistency, we ask all students to do this in the event of an emergency.

Technology Requirements and Skills
Computer Hardware and Software
- High-speed Internet connection
- Laptop or desktop computer with a minimum of a 2 GHz processor and 2 GB of RAM
- Windows for PC computers OR Mac iOS for Apple computers.
- Complete Microsoft Office Suite or comparable and ability to use Adobe PDF software (install,
- download, open and convert)
- Mozilla Firefox, Chrome browser, and/or Safari browsers (Chrome required for on-boarding quiz)

Canvas
This class will use Canvas to deliver course materials to online students. ALL course materials and quiz/discussion assessments will take place on this platform.

Proctoring Information
In order to verify the identity of all GT online students, all online students are required to complete the onboarding quiz that uses Honorlock. Honorlock is utilized for student identity verification and to ensure academic integrity. Honorlock provides student identity verification via facial and ID photos. You may also be asked to scan the room around you. The onboarding quiz will be a practice quiz that will not affect your grade in the course. You can take the onboarding quiz as many times as you want. All potential violations are reviewed by a human. The Honorlock support team is available 24/7. While Honorlock will not require you to create an account, download software, or schedule an appointment in advance, you will need Google Chrome and download the Honorlock Chrome Extension. Information on how to access Honorlock and additional resources are provided below. You can also access Honorlock support at https://honorlock.com/support/.

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Course Policies, Expectations & Guidelines
Communication Policy
You are responsible for knowing the following information:
1. Anything posted to this syllabus
2. Anything emailed directly to you by the teaching team (including announcements via Canvas and Ed Discussions), 24 hours after receiving such an email or post.

Because Canvas and Ed Discussions announcements are emailed to you as well, you need only to check your Georgia Tech email once every 24 hours to remain up to date on new information during the semester. Georgia Tech generally recommends students to check their Georgia Tech email once every 24 hours. So, if an announcement or message is time sensitive, you will not be responsible for the contents of the announcement until 24 hours after it has been sent.

Online Student Conduct and (N)etiquette
Communicating appropriately in the online classroom can be challenging. In order to minimize this challenge, it is important to remember several points of **"internet etiquette"** that will smooth communication for both students and instructors:
1. _Read first, Write later_. Read the ENTIRE set of posts/comments on a discussion board before posting your reply, in order to prevent repeating commentary or asking questions that have already been answered.
2. _Avoid language that may come across as strong or offensive._ Language can be easily misinterpreted in written electronic communication. Review email and discussion board posts BEFORE submitting. Humor and sarcasm may be easily misinterpreted by your reader(s). Try to be as matter of fact and professional as possible.
3. _Follow the language rules of the Internet._ Do not write using all capital letters, because it will appear as shouting. Also, the use of emoticons can be helpful when used to convey nonverbal feelings. J
4. _Consider the privacy of others_. Ask permission prior to giving out a classmate's email address or other information.
5. _Keep attachments small_. If it is necessary to send pictures, change the size to an acceptable 250kb or less (one free, web-based tool to try is picresize.com).
6. _No inappropriate material._ Do not forward virus warnings, chain letters, jokes, etc. to classmates or instructors. The sharing of pornographic material is forbidden.

NOTE: _The instructor reserves the right to remove posts that are not collegial in nature and/or do not meet the Online Student Conduct and Etiquette guidelines listed above._

University Use of Electronic Email
A university-assigned student e-mail account is the official university means of communication with all students at Georgia Institute of Technology. Students are responsible for all information sent to them via their university-assigned e-mail account. If a student chooses to forward information in their university e-mail account, he or she is responsible for all information, including attachments, sent to any other e-mail account. To stay current with university information, students are expected to check their official university e-mail account and other electronic communications on a frequent and consistent basis. Recognizing that some communications may be time-critical, the university recommends that electronic communications be checked minimally twice a week.

Plagiarism & Academic Integrity
Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. All students enrolled at Georgia Tech, and all its campuses, are to perform their academic work according to standards set by faculty members, departments, schools and colleges of the university; and cheating and plagiarism constitute fraudulent misrepresentation for which no credit can be given and for which appropriate sanctions are warranted and will be applied. For information on Georgia Tech's Academic Honor Code, please visit http://www.catalog.gatech.edu/policies/honor-code/ or http://www.catalog.gatech.edu/rules/18/.

Any student suspected of cheating or plagiarizing on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

Accommodations for Students with Disabilities
If you are a student with learning needs that require special accommodation, contact the Office of Disability Services at 404-894-2563 or http://disabilityservices.gatech.edu/, as soon as possible, to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

Student-Faculty Expectations Agreement
At Georgia Tech we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. See http://www.catalog.gatech.edu/rules/22/ for an articulation of some basic expectation that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.

Subject to Change Statement
The syllabus and course schedule may be subject to change. Changes will be communicated via the Canvas announcement tool. It is the responsibility of students to check Ed Discussions, email messages, and course announcements to stay current in their online courses.

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Course Schedule

Week/Dates	Lessons	Readings	Deliverables
1 January 10	**Lesson 1: C4G and BLIS Introduction**	C4G BLIS: Health Care Delivery via Iterative Collaborative Design in Resource-constrained Settings	**Assignment 1: Skills & Interests Exercise Due**
2 January 17	**Lesson 2: BLIS Challenges and System Design**		**Initial Goals Due**
3 January 24	**Lesson 3: BLIS Deployment & Results**	Information Systems and Developing Countries: Failure, Success and Local Improvisations	**Team Formation Due**
4 January 31	**Lesson 4: Technology's Law of Amplification (Kentaro Toyama)**	Geek Heresy: Rescuing Social Change from the Cult of Technology	**Assignment 2: Tech Survey Due**
5 February 7	**Lesson 5: V2V Introduction & Challenges**	Design and Deployment of a Blood Safety Monitoring Tool	**Goals & Deliverables Due Team Webpage Due**
6 February 14	**Lesson 6: V2V Design & Deployment**		**Presentation to TA Due**
7 February 21	**Lesson 7: V2V Feature Walkthrough**	ICT4D 2.0: The Next Phase of Applying ICT for International Development	**Initial Evaluations Due**
8 February 28	**Lesson 8: Designing Technology to Improve Health and Wellness (Rosa Arriaga)**	A Text Message a Day Keeps the Pulmonologist Away	**Midterm Paper Due**
9 March 7	**Lesson 9: Project Guidelines & Metrics**		
10 March 14	**Lesson 10: LifeNet & Reliable Connectivity**	LifeNet: A Flexible Ad hoc Networking Solution for Transient Environments	**Project Peer Evaluations Due**
Spring Break March 21	**Lesson 11: LifeNet Evaluation & Deployment**	Sustainability Failures of Rural Telecenters: Challenges from the Sustainable Access in Rural India (SARI) Project	
11 March 28	**Lesson 12: Ending Homelessness (Protip Biswas)** **Interview with Protip Biswas**		
12 April 4	**Lesson 13: Digital Threats to Democracy (Mike Best)**		**Demo Due**
13 April 11	**Lesson 14: Lessons from Digital Green (Kentaro Toyama)**		
14 April 18	**Lesson 15: History of C4G**		**Field Evaluation Due**
15 April 25			**Final Presentation Due**
Finals Week May 2			**Final Report Due**