Syllabus - CS6150, Computing for Good, Fall 2021

Professor: Santosh Vempala

**UNDER CONSTRUCTION**

[Assignments](file:///C:\Users\ciolf\GitHub\C4G\assignments.docx) | [Course Outline](file:///C:\Users\ciolf\GitHub\C4G\C4G%20Course%20Design%20Outline.docx) | [Schedule](schedule.docx) | [Public Site](https://computingcenterforsocialgood.org/c4g2/) | [Academic Calendar](https://registrar.gatech.edu/calendar)

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Prerequisites

A 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 (G) User Interface Design.

Introduction

Computing for Good (C4G) provides students from various backgrounds the opportunity to gain skills related to social good tech projects. The computing for good domain involves a variety of topics including pre-deployment considerations, architecture, deployment, and sustainability.

Students will explore C4G through the creation and deployment of a semester-long project, created either individually or through a team. Projects are chosen by each student and/or team. In the past, these have included topics such as hunger, peace, homelessness, climate change, social justice, etc. Teams may choose their own tools, e.g., Swift, Dart/Flutter, PHP, MySQL, Java, HTML, etc. Case studies of projects, successful and failed, accentuate the team project.

Objectives

The course’s primary objectives are~~:~~

* Learn to 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.
* To provide exposure to the tools required to execute a C4G project
* To develop an appreciation of the components and factors leading to both successful and failed C4G deployments
* To gain an understanding of the domains that can benefit from C4G projects based on best practices

Topics

Selected topics include:

* Toyama’s Law of Amplification
* Technology myths
* The danger of quick fixes
* Technocratic orthodoxy

Assignments

* Weekly Progress Report (during Project Period, individually submitted)
* [Mid-Term](assignments.docx): Announced: Lesson 2; Due: Lesson 8.
* [Team Project](assignments.docx): Sunday 12/9/2021 11:59 PM (Finals: 12/9-12/16/2021)
* [Assignments](assignments.docx) – Complete assignments listing (link to be finalized in Canvas)
* [Test Canvas Site](https://gatech.instructure.com/courses/221674) (requires Canvas login)

Textbook

* [Geek Heresy: Rescuing Social Change from the Cult of Technology](https://www.amazon.com/Geek-Heresy-Rescuing-Social-Technology/dp/161039528X) – Kentaro Toyama

Papers

* [C4G BLIS: Health Care Delivery via Iterative Collaborative Design in Resource-constrained Settings](https://dl.acm.org/doi/abs/10.1145/2909609.2909657) – Vempala et al (**Lesson 2**)
* [Mobile Phones for Maternal Health in Rural India](https://homes.cs.washington.edu/~anderson/papers/2015/kumar_chi2015.pdf) – Kumar and Anderson
* [A Text Message a Day Keeps the Pulmonologist Away](https://www.cc.gatech.edu/fac/arriaga/YunArriagaCHI13.pdf) – Yun and Arriaga (**Lesson 8**)
* [ICT4D 2.0: The Next Phase of Applying ICT for International Development](https://ieeexplore.ieee.org/abstract/document/4548169?casa_token=HG9r-PBXY5UAAAAA:hUFTRND5OGVrbz7zADS1Zxy7dgHYMr41u6_YdB428M-HnXCEzXv00ToBwara9qzXS_zcZ5oC) – Heeks
* [Information Systems and Developing Countries: Failure, Success and Local Improvisations](https://www.tandfonline.com/doi/abs/10.1080/01972240290075039?casa_token=3WkY2zrlPRAAAAAA%3AbPx9qWKjw0wLa6ropZQBwSkqN25Jg0oh50ofHXskezo42y-4kwtc7Q-caV6BWVTQeGdxUtgAS6Im&) – Heeks
* [Design and Deployment of a Blood Safety Monitoring Tool](https://www.cc.gatech.edu/fac/vempala/papers/ICTD09.pdf) – Thomas, Osuntogun, Pitman, Mulenga, Vempala (also [here](https://ieeexplore.ieee.org/abstract/document/5426674))
* [Sustainability Failures of Rural Telecenters: Challenges from the Sustainable Access in Rural India (SARI) Project](https://smartech.gatech.edu/bitstream/handle/1853/48574/Sustainability%20Failures%20of%20Rural%20Telecenters%20Challenges%20from%20the%20Sustainable%20Access%20in%20Rural%20India%20(SARI)%20Project.pdf?sequence=1&isAllowed=y) – Best and Kumar (**Lesson 12**)

Slides

* [Ten Myths of ICT4D](https://gtvault-my.sharepoint.com/:p:/g/personal/dciolfi3_gatech_edu/Ef3uUDZ3UGJCl9rqLa74G6EByoXRTVSsljBuzL4kvKFieg) – Kentaro Toyama (Lesson 4, slides are on Dante’s OneDrive)

Honor Code

* Please abide by the [Georgia Tech Honor Code](https://policylibrary.gatech.edu/student-affairs/academic-honor-code) at all times. While it is OK to use ideas of others, it is *not* OK to plagiarize. In that spirit, please cite references and give credit to colleagues and others when appropriate. An example of what *is OK* to use is the *idea* of creating a dashboard that provides real-time data. What *is not OK* is taking the code for a dashboard from GitHub without substantially changing it and/or not giving credit per the license posted on the repository.