Hi. My name is Michael Vinogradov, and I’m an MScIS student here at Athabasca University. I’m working on my Thesis track where we’re carrying out a trial using a mobile app to see if we can influence behaviour.

Now, mobile apps have been used in research since the early 2000s. With lots of focus being given to mobile education apps and mobile health tracking and improvement apps.

And yet to this day researchers are saying we need to be doing it better. The main concern is the lack of control trials to prove the efficacy of these apps or the features that these apps are promoting.

For my own Master’s Thesis research I decided to address just that and build a mobile health app to carry out a randomized control trial to systematically measure the effects of a particular feature. The participants are divided into two groups – a control and an experiment – and a feature is either available to the participant or it is not. At the end of the trial, everyone fills out some surveys and I should be able to measure the effects of this feature on the participant.

Now, this research is still underway, so I’m not here to talk about that. I’m here to talk about the platform that I built to carry out this study. This is the part that’s responsible for receiving registrations into the trial, splitting the participants into groups, keeping everything double blinded and anonymous, delivering surveys and features to specified groups, and of course receiving answers and recording everything in the database.

I’ve separated that part of the system away from my application and am turning it into an open-source project available on GitHub for other researchers to use and build upon. I want to help researchers out there to focus on developing and delivering their interventions, not spending time rebuilding this foundation.

So, with this, I present to you – the RCTrials Project.

It’s a tool built to facilitate randomized control trials to be delivered in a mobile experience.

It can be consumed in three different ways.

The hosted solution allows a researcher to log into the site, define the parameters of their study – when the trial starts and ends, into how many groups to split the participants, what kind of features to deliver to which groups, and the surveys to deliver to these participants. Then participants can join the study by connecting to the hosted service through an Android app and registering using the trial code. The participant is randomly assigned into a group and receives their pre-trial surveys. Filling them out we can see the results update for the researcher. This solution is provided primarily for demonstration and exploration purposes.

The integrated solution allows a researcher developing their own intervention to bring those same features into their mobile app. You can see a Postman demo here. By connecting to the API through a series of calls the user of your app can register in the trial, be assigned into a group, receive information about which features should be enabled or disabled in your app, and the questionnaires defined for that group. The participant sends back responses to the questionnaires and at the end you can track which survey responses came from which group, while still keeping all the participants completely anonymous. This is the primary way in which the system is meant to be used to enable you to deliver a mobile RCT intervention. The complete documentation for all the API endpoints is provided here.

Finally, the custom solution allows you to build whatever you like on the foundation of this project. All the source code is freely available on GitHub and MIT licensed for you to use in your private or commercial project.

Currently the project is in development so there aren’t a lot of features. It has *just enough* for me to carry out my very-specific study, but I’m hoping with time and community help we can build it out to a more comprehensive and versatile tool. In the meantime, I encourage you to check it out and get in touch with me and let me know if there are features that you need in order to carry out your study, and I will do my best to help.

I hope this project can help you with your trial.

Thank you for your time, and good luck with your research.

“*apps based on theoretical knowledge and well-designed research are lacking*” [1]

“*A growing number of health research programs investigate app-based interventions, yet many research teams conduct their app research in isolation.*” [2]

“*Lack of protocols and standards are the main challenge for mobile health applications*” [3]

[1] Hwang, W. J., Ha, J. S., & Kim, M. J. (2021).

Research trends on mobile mental health application for general population: A scoping review.

International Journal of Environmental Research and Public Health, 18(5), 2459.

[2] Siegler, A. J., Knox, J., Bauermeister, J. A., Golinkoff, J., Hightow-Weidman, L., & Scott, H. (2021).

Mobile app development in health research: pitfalls and solutions.

Mhealth, 7.

[3] Pires, I. M., Marques, G., Garcia, N. M., Flórez-Revuelta, F., Ponciano, V., & Oniani, S. (2020).

A research on the classification and applicability of the mobile health applications.

Journal of personalized medicine, 10(1), 11.