



MED 2021

# 29<sup>th</sup> Mediterranean Conference on Control and Automation

JUNE 22 – 25 2021, BARI, ITALY, <http://med2021.poliba.it>

## Tutorial Session at MED 2021 on

### A user's guide to Girls in Control – Tutorial for colleagues, instructors and teachers on how to prepare, organize and run a GIC workshop

**Abstract** This tutorial aims at teaching colleagues, teachers and instructors in the area of STEM, and in particular (control) engineering how to prepare, organize and run a Girls in Control (GIC) workshop. GIC is a workshop format specifically designed to reach out to girls in the age between 10 and 15 years old to teach them, the basics of control engineering a fun and engaging way. It has been offered in several languages in connection with the IFAC world congress in July 2020 and with the IEEE Conference on Decision and Control (CDC) in December 2020 with great success. In this workshop at MED2021 we share our experience, show the used material, explain all steps of the workshop and discuss in detail what needs to be done in order to prepare, organize and host a GIC workshop successfully.

**Duration** 2 hours

**Preferred mode of presentation (to be confirmed closer to the conference and depending on the pandemics evolution):** Online

**Organizers** Steffi Knorn, Professor

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#### **List of topics**

The workshop intends to address all practical issues needed to run a GIC workshop in any language. This includes all steps from producing the material, advertising the event, handling registrations, running the workshop itself and debriefing. It targets mostly colleagues, i.e., academics in the field of control but is also suitable for instructors, teachers and other volunteers interested in running this or similar outreach activities in the field of (control) engineering in a virtual format. However, the material for the workshop can also easily be used for physical outreach activities, such that this workshop at MED2021 is also suitable for



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learning about how to run non-virtual workshops for girls / kids within the age between 10 and 15 years old.

The intended time plan for a two-hour workshop is as follows (with some short explanation on what to expect for each point):

1. Welcome (5 min):  
Introduction of the workshop organizers, time plan and what to expect from the workshop, short description of the GIC workshop
2. Why do we do this? Why GIRLS in control? (5 min)  
Explanation and motivation on why to run outreach activities, why at this age (compared to older kids / teens as often done in control outreach activities) and why focused on girls rather than all kids (short discussion on gender gap) NOTE: the material, organization and hosting of the workshop will also work the very same way when including boys.
3. Administrative issues (15 min)  
Explanations, suggestions and how-to's regarding how to advertise the workshop, attract participants, handle registrations, aspects of data handling (specifically about handling personal data of minors, GDPR issues included)
4. Explain / go through workshop time plan (20 min)  
Detailed discussion of GIC workshop time plan including explanations about when, where, why and how to divert from the original time plan if need be
5. Workshop material (15 min)  
Show workshop videos in English and instruction to be sent to participants on how to use zoom and scratch (may be joined with point 4 above)
6. Basics in scratch (15 min)  
Showing initial steps in scratch, specifically needed for the GIC workshop
7. Experience from previous workshops (15 min)  
Discussing common issues encountered during the GIC workshops including technical problems of the participants when using scratch as well as difficulties due to differences in prior knowledge of the participants and how to handle them
8. Basics in zoom (10 min)  
Including how and when to use breakout rooms and other technical features during virtual workshops
9. Guide on how to create material in an additional language (10 min)  
Overview of steps needed to prepare, translate and produce material for languages, that are not currently offered / available as well as what to consider to adapt the material to local needs where required
10. Q&A (10 min)  
Answering any open questions of participants

## **The speakers will be the organizers (Knorn, Jackson and Varagnolo):**

Steffi Knorn: Professor in Control in Berlin since 2021, part of core team to initiate the GIC workshop in 2020 as part of IFAC2020 including: initial idea, preparation of general material, preparation of German workshop material, hosting of GIC workshops in German and English. Also engaged in several other outreach initiatives and projects including local schools.

Roxanne Jackson: PhD student in Magdeburg since 2020, part of core team to initiate the GIC workshop in 2020 as part of IFAC2020 including: initial idea, preparation of general material, preparation of English workshop material, hosting of GIC workshops in English.



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Damiano Varagnolo: Professor in Control in Trondheim since 2018, part of core team to initiate the GIC workshop in 2020 as part of IFAC2020 including: initial idea, preparation of general material, hosting of GIC workshops in Italian. Also engaged in several other outreach initiatives and projects including local schools.