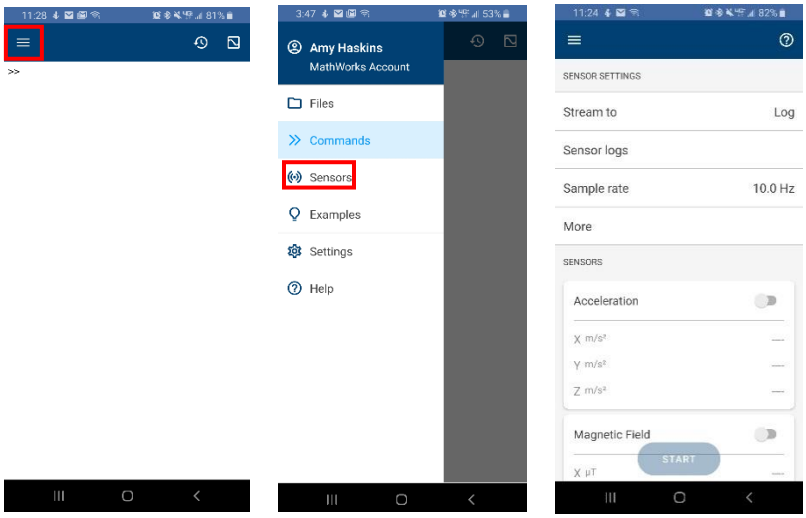
How can we make sense of the unseen world? – GHC22

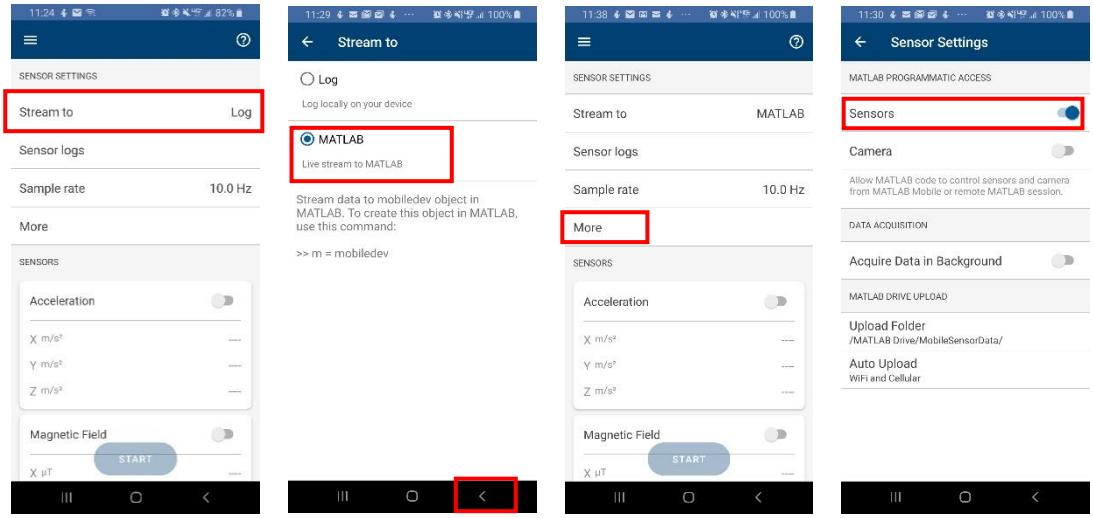
Getting Started with MATLAB Mobile on Android

Explore the MATLAB Mobile App:

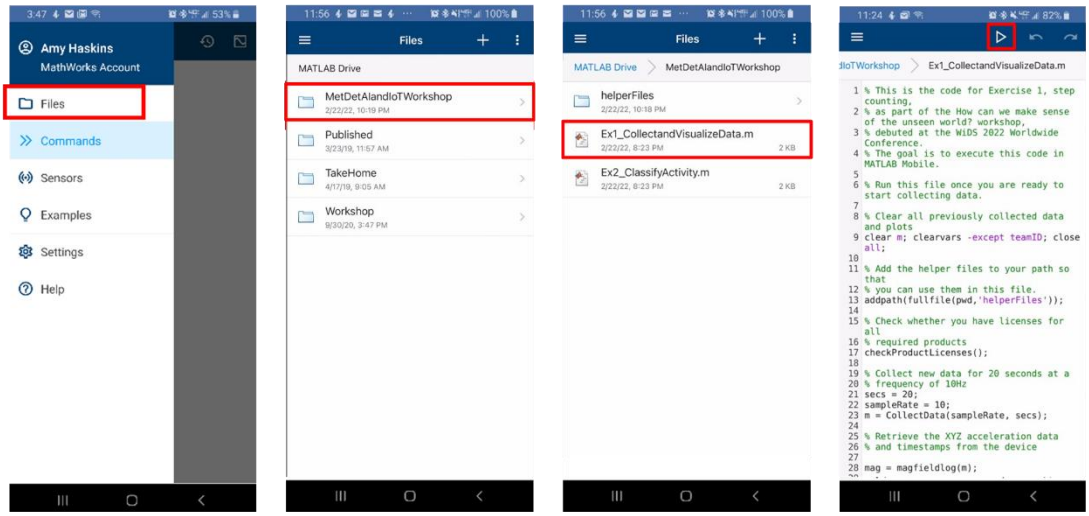
1. Open the **Sensors** pane from the drop-down menu in the top-left corner.
2. Identify the **Acceleration** and **Magnetic Field** sensor we will use in the workshop.



3. In order to access the sensor data, there are a couple of one-time setup steps required.
    a. Select **Stream to** and choose **MATLAB** from the options listed. Click the back arrow when finished to return to the **Sensors** menu.
    b. Select **More** to bring up the **Sensor Settings** screen. From here, allow MATLAB programmatic access to sensors by clicking the **Sensors** switch.



4. To execute a MATLAB script, open the .m file and run it using the triangular **Run** button. Navigate to **Files** from the drop-down in the top-left corner. The app switches to the Command Window to show the script output. Navigate back to **Files** to get back to the File Browser.



Exercise 1. Collect and visualize magnetometer data

1. Open **Ex1_CollectandVisualizeData.m** and click the triangular **Run** button to execute the script. A message and prompt appear on your screen, indicating that the script is running.
2. Press **Return** when prompted to start logging sensor data for the script to analyze.
3. Move around the room and experiment with holding your phone near metallic objects for **20 seconds**. The script keeps time for you.
4. View the plots visualizing the summary statistics and cluster analysis of the collected data.

Exercise 2. Classify activity and visualize aggregated data from ThingSpeak

1. Open **Ex2_ThingSpeak_AIandIoT.m** and click the triangular **Run** button to execute the script.
2. Enter your assigned team number and press **Return**
3. Press **Return** when prompted to start logging sensor data for the script to analyze.
4. Move – walk, run, stand still – around the room for **30 seconds**. The script keeps time for you.
5. View fitness activity from all teams.

After the Workshop

We hope that you will continue exploring sensors, AI, and IoT in your own applications! After the workshop, you'll have access to many resources for inspiration and practice. You will also have access to the technologies used during the workshop for 30 days. After that, you are welcome to sign up for a trial.

Want to Learn More?

- Practice programming and learn more about MATLAB by taking the **MATLAB Onramp:** https://matlabacademy.mathworks.com/

- Learn about deep learning in the **Machine Learning Onramp**: https://www.mathworks.com/training-schedule/machine-learning-with-matlab

- Learn about **ThingSpeak** for IoT projects:
  https://thingspeak.com

- Find inspiration from our user stories:
  https://www.mathworks.com/company/user_stories.html

- Learn more with a MATLAB trial license:
  https://www.mathworks.com/campaigns/products/trials.html

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Use and follow **#MetDetAIAndIoT** and **#shelovesmatlab** on Twitter, LinkedIn, Facebook, and Instagram.

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