MIT App Inventor in a nutshell
MIT App Inventor by numbers

- Started in 2008 at Google
- Open sourced and transferred to MIT in 2011
- 18 million users since inception
- 84.6 million projects created
- 902 thousand users in the last month
- 164 contributors on GitHub
Visit

fosdem23.appinventor.mit.edu

to access links to all of the materials in this talk.
Use MIT App Inventor 2
Creating an anonymous account

Use the link to code.appinventor.mit.edu to open the PICaboo starter project.

Click **Continue Without an Account** to get started.

**Welcome to MIT App Inventor!**

[Button] Continue Without An Account

or

[Form]

Your Revisit Code: [ ]-[ ]-[ ]-[ ]

[Button] Enter with Revisit Code
Creating an anonymous account

Write down your code if you want to return.

Click **Continue**

If you get a splash screen,

click **Continue**
Starting the PICaboo Project
Train a Classifier
Train a classifier

In a new tab, navigate to classifier.appinventor.mit.edu

This webpage uses your webcam, but no images leave your computer. All training is done in your browser using Tensorflow.js.
Train a classifier

Click the + icon to create two labels: **Me** and **NotMe**
Train a classifier

Select the **Me** label and click **Capture** to gather images.

Try to get images at slightly different angles and lighting.
Train a classifier

Select the **NotMe** label, cover your face, and click **Capture** to gather images.

Try to get images at slightly different angles and lighting.
Train a classifier

Click **Train** to start training the model
Train a classifier

Click **Export Model** to save the model to your computer
Coding Your App
Uploading your Model

Under **Media**, click **Upload File…**

In the dialog, select your **model.mdl** file and click **OK** to upload
Enabling your Model

Click on PersonalImageClassifier1 below the screen.

In the Properties list, select Model, choose your file from the dropdown, and click OK.
Let's Start Coding

In the top right corner, click **Blocks** to switch to the blocks editor.
Accessing Variables

Hover your mouse over the **result** field to get a dropdown with blocks in it.

Drag the **get result** block into the workspace.
Compute Confidence Levels

Using the **Math**, **Text**, and **Dictionary** blocks, construct the blocks below to compute the confidence of the **Me** class.

Right click and select **Duplicate** to copy the blocks to make a **NotMe** version as well.
Updating the UI (Part 1)

Select **Percentage1** label in the list and grab its `set Text` block.

Do the same for **BarGraph1** and its `WidthPercent`.

Construct the blocks to the right and then duplicate it for **Percentage2** and **BarGraph2**.
In the **Control** category, select the **if then else** block so we can update the view based on the confidences.
Grab the \(=\) block from the \textbf{Math} category and use its dropdown to get the \(>\) operator and use it to compare \textbf{MeConfidence} to \textbf{NotMeConfidence}.
Select Screen1 from the list and grab the set BackgroundColor block to change it to light blue.

Select HappyBaby and select its set Visible block.

Duplicate HappyBaby.Visible and use the dropdown to select SadBaby.

Build the blocks to the right and plug it into the if block’s "then" statement.
Updating the UI (Part 5)

Duplicate the Screen1, HappyBaby, and SadBaby logic from the previous slide.

Change the background color to pink.

Swap the true/false blocks to reverse the logic.
Install the Companion App

Scan the QR code to install the MIT AI2 Companion app on your Android device

Or install it via the Google Play Store
Connect the Companion

From the **Connect** menu, select **AI Companion**

Use the companion app to scan the QR code that appears.