

# Machine Learning applicability in India

Akshay Bahadur



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TFUG Chennai

# Acknowledgement



# Akshay Bahadur

- SDE – Symantec



- Intel Software Innovator



- Google Developer Expert  
(Machine Learning)



# Inspiration

# Tania's Story



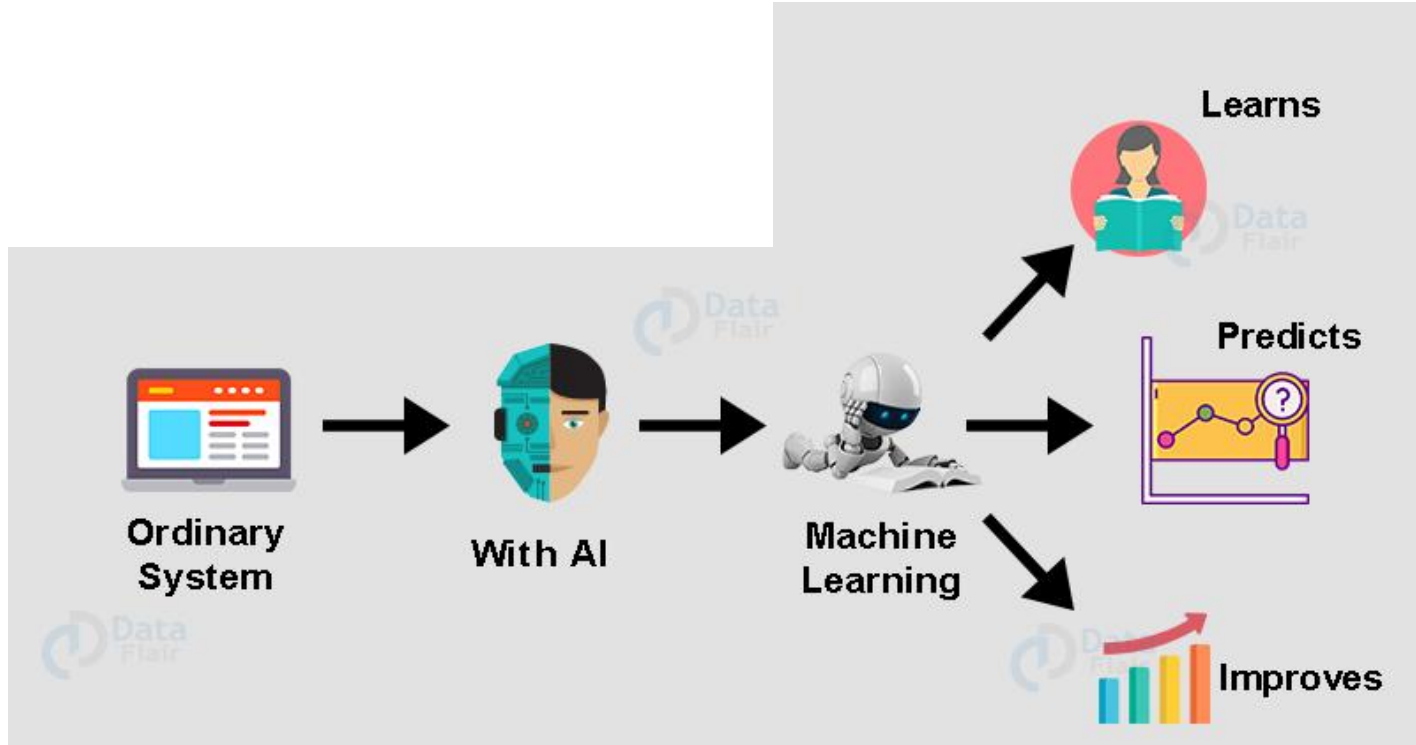
# Important Link

- [bit.ly/tfug-chennai](https://bit.ly/tfug-chennai)

# Artificial Intelligence



# Machine Learning





# Machine Learning

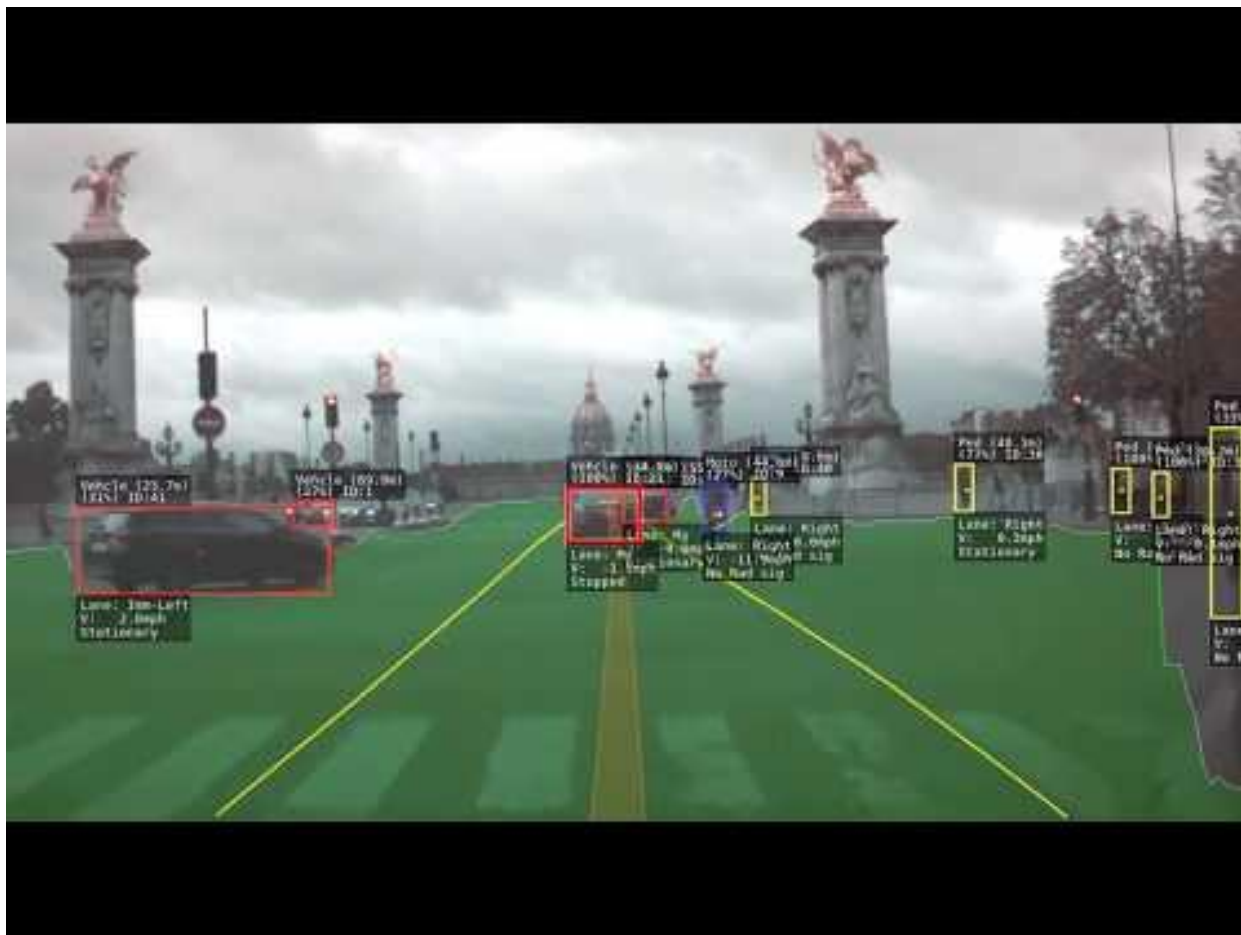
- Learn
- Improve
- Predict

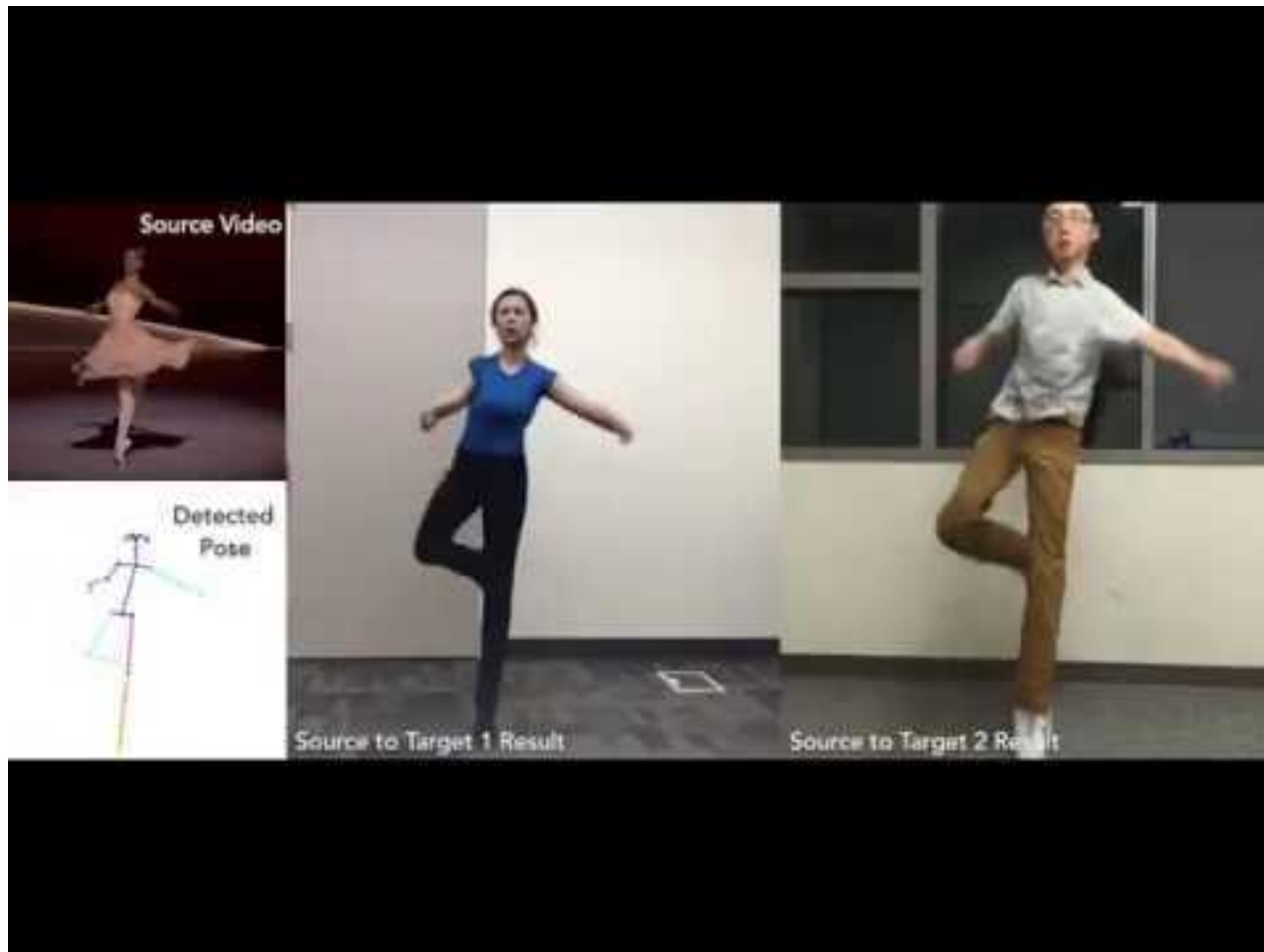
# Applications



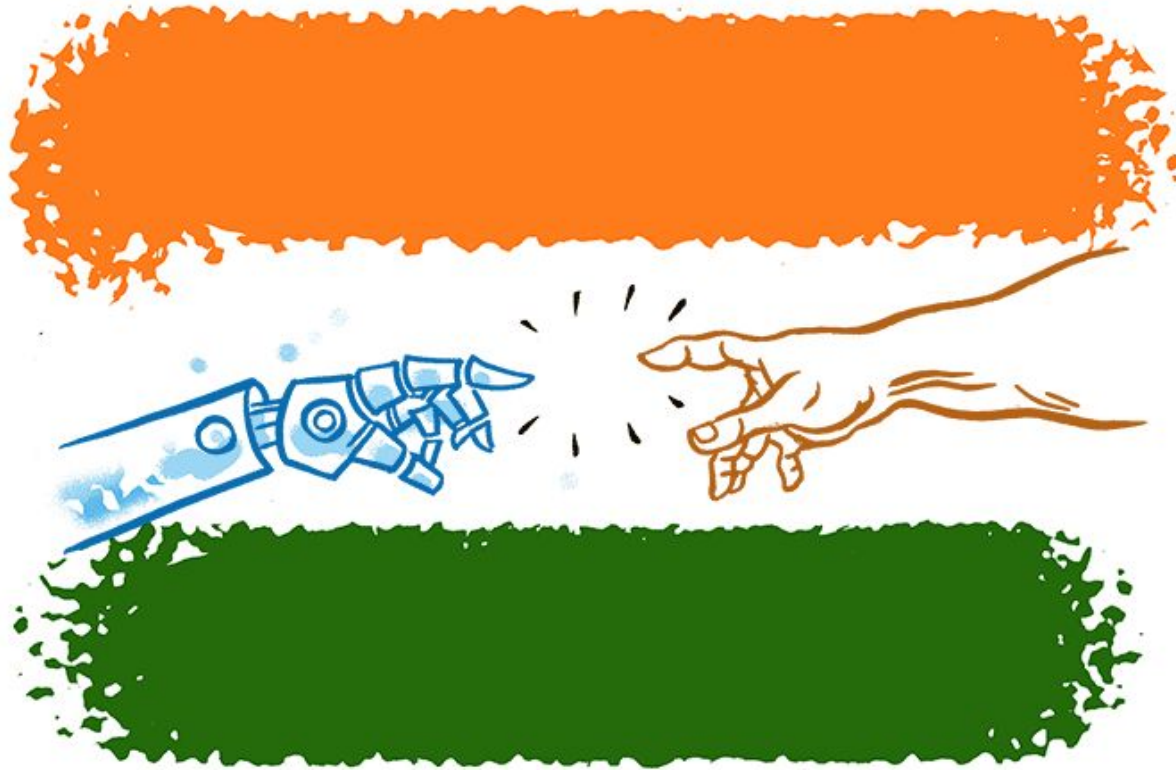
# THIS ROBOT KILLS YOUR WEEDS



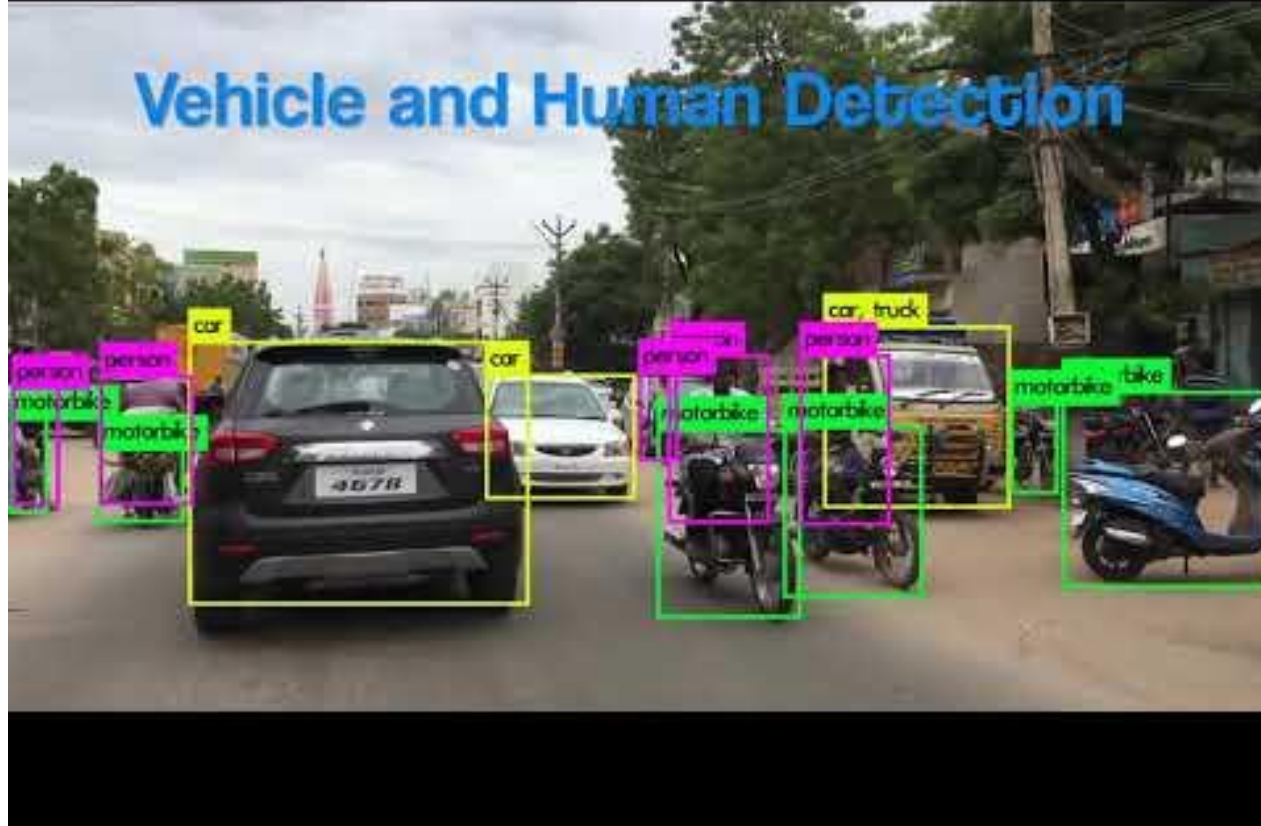




# Artificial Intelligence in India



# Vehicle and Human Detection







# Celestini Project

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## India 2018





**Build with  
community**



# The Journey

- **BTECH** - Symbiosis Institute of Technology



- **Netcracker Tech - Java Developer**



- Symantec - Big Data



# The Path

# Open Source Contributions







Can a neural network learn to recognize doodling?

Help teach it by adding your drawings to the [world's largest doodling data set](#), shared publicly to help with machine learning research.

Let's Draw!



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# End to End Learning for Self-Driving Cars

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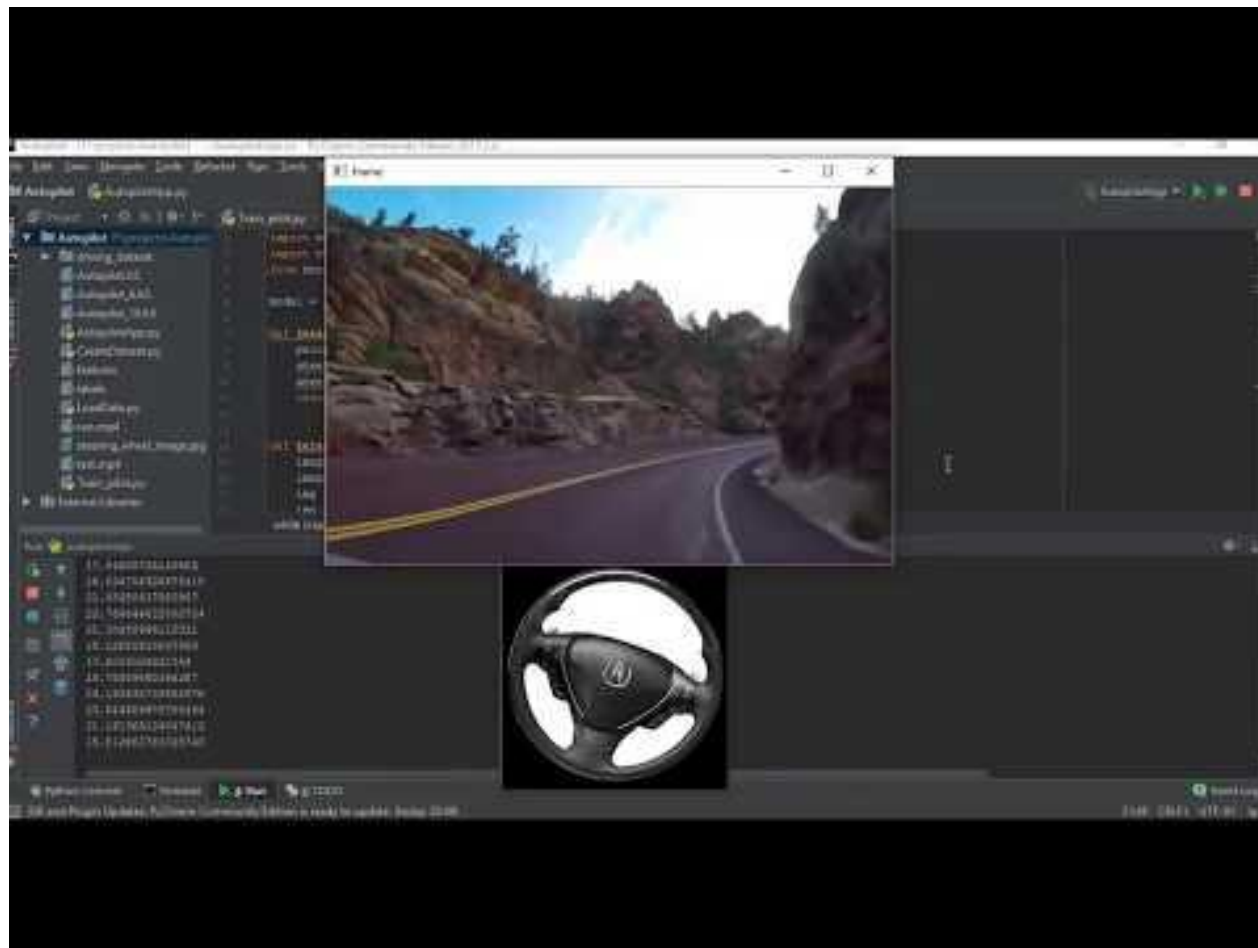
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# Three aspects of a great Presentation

- Content
- Story
- Takeaway

# Takeaway

# Mark Rober's Experiment

The screenshot shows a maze game interface. On the left, a 10x10 grid represents the maze. A blue car icon is at the bottom-left corner, labeled 'Start'. The maze has several blue and green squares. A 'Win' label is at the bottom-right corner. Below the maze, there is a 'How to play' section with four instructions:

1. Help the car get through the maze to the "win" square.
2. Build a computer program by dragging code blocks from the center and clicking them together in the space on the right.
3. Click "Run" to see what your program does.
4. Try to solve the puzzle using the least number of code blocks.

In the center, there is a green 'Run' button and a 'Total Score: 200' display. On the right, there is a code editor with a palette of code blocks and a workspace. The palette includes blocks for 'Move forward', 'Turn right', 'Turn left', 'If square is blue', 'If square is green', 'Repeat forever', and 'Repeat  times'. The workspace shows a program starting with 'When run', followed by a 'Repeat forever' loop containing 'If square is blue' (leading to 'Turn right') and 'If square is green' (leading to 'Turn left'). A 'Help with code blocks' link is at the bottom right.

# Mark Rober's Experiment

The screenshot shows the 'Mark Rober's Experiment' interface. At the top left is a maze with a blue car at the start. To the right of the maze is a code editor with several blocks: 'Move forward', 'Turn right 90°', 'Turn left 90°', and a 'Repeat forever' loop containing 'Move forward', 'If square is blue' (with 'Turn right 90°' inside), and 'If square is green'. A large dark grey banner across the center reads 'That didn't work. Please try again.' Below the banner, on the left, is the 'Start' button and 'How to play' instructions. In the center is a 'Stop' button and 'Total Score: 200'. On the right are more code blocks: 'Repeat forever' and 'Repeat 2 times'. At the bottom right is a 'Help with code blocks' link and a trash icon.

That didn't work. Please try again.

**Start**

**How to play**

1. Help the car get through the maze to the "win" square.
2. Build a computer program by dragging code blocks from the center and clicking them together in the space on the right.
3. Click "Run" to see what your program does.
4. Try to solve the puzzle using the least number of code blocks.

**Stop**

**Total Score: 200**

[Help with code blocks](#)



# Mark Rober's Experiment

The screenshot shows the 'Mark Rober's Experiment' game interface. At the top, a maze with a blue car at the start and a green 'win' square is visible. To the right, a code editor shows a sequence of blocks: 'When run', 'Repeat forever' (containing 'Move forward', 'If square is blue' with 'Turn right 90°', and 'If square is green'). A large dark grey feedback box in the center reads: 'That didn't work. You lost 5 points. You now have 195 points. Please try again.' Below the maze, the 'Start' button is visible. The 'How to play' section lists four instructions: 1. Help the car get through the maze to the 'win' square. 2. Build a computer program by dragging code blocks from the center and clicking them together in the space on the right. 3. Click 'Run' to see what your program does. 4. Try to solve the puzzle using the least number of code blocks. In the center, there is a red 'Stop' button and a 'Total Score: 200' display. On the right, there are more code blocks, including 'Repeat forever' and 'Repeat 2 times', and a 'Help with code blocks' link at the bottom.

That didn't work. You lost 5 points.  
You now have 195 points. Please try again.

**Start**

**How to play**

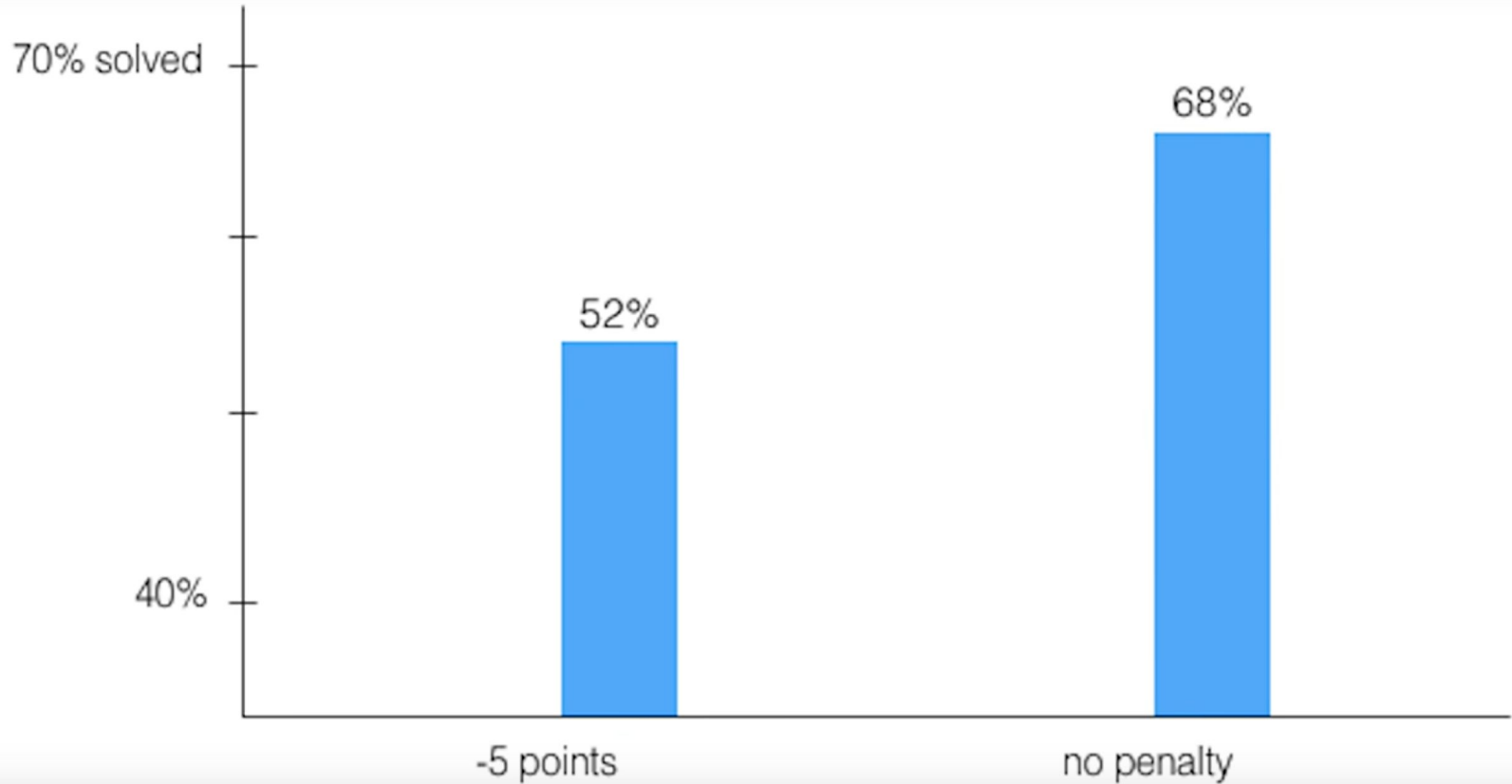
1. Help the car get through the maze to the "win" square.
2. Build a computer program by dragging code blocks from the center and clicking them together in the space on the right.
3. Click "Run" to see what your program does.
4. Try to solve the puzzle using the least number of code blocks.

**Stop**

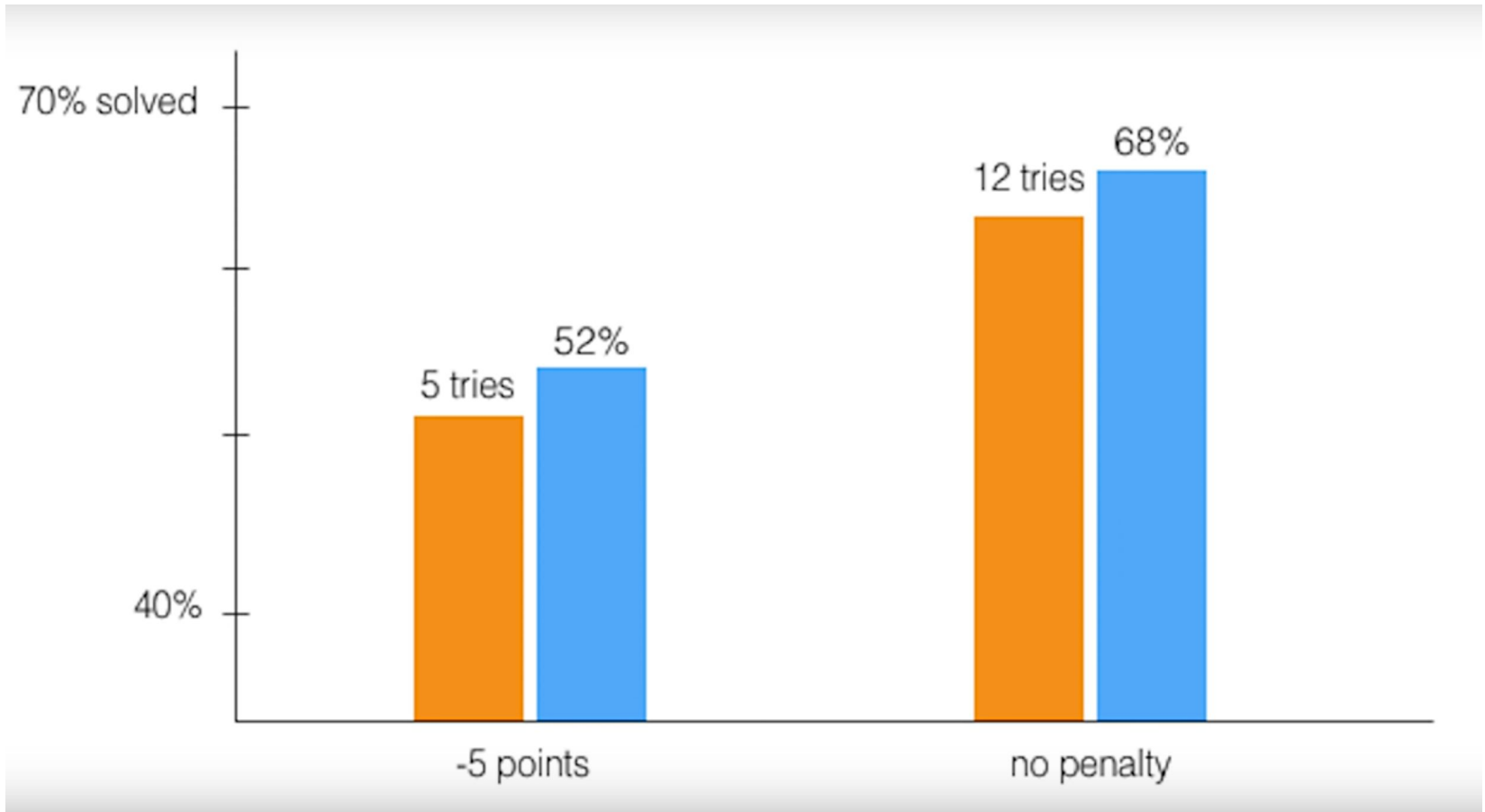
**Total Score:**  
**200**

[Help with code blocks](#)

# Mark Rober's Experiment



# Mark Rober's Experiment



# Adding it up

- Don't think
- Just Do

# Indian Sign Language Recognition(ISLAR)

# Problem Statement

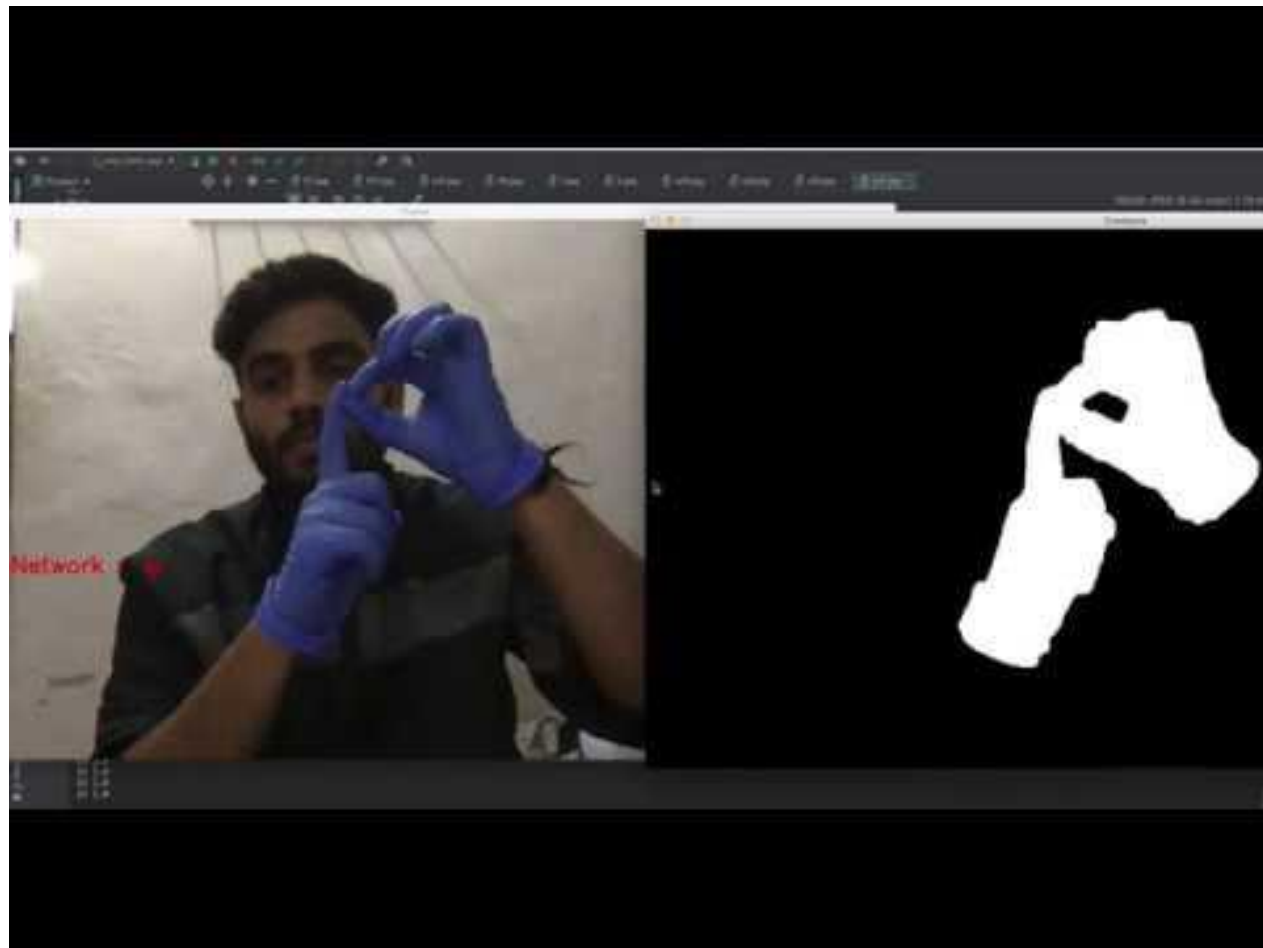
- **14,000,000** people in India have speech/hearing impairment
- **80kms** – Distance b/w Mumbai and Pune; also the distance within which variances in signs become noticeable - ‘Sign Language’ becomes ‘Sign Languages’

# Ideal Solution

- **Standardize** ISL like the American Sign Language
- Leveraging **Artificial Intelligence** to accurately predict minute changes in signs & symbols
- Keeping **resource** intensity of the application bare minimum to ensure feasible scalability









Like



Hello



God Ganesh



Confused



Scared



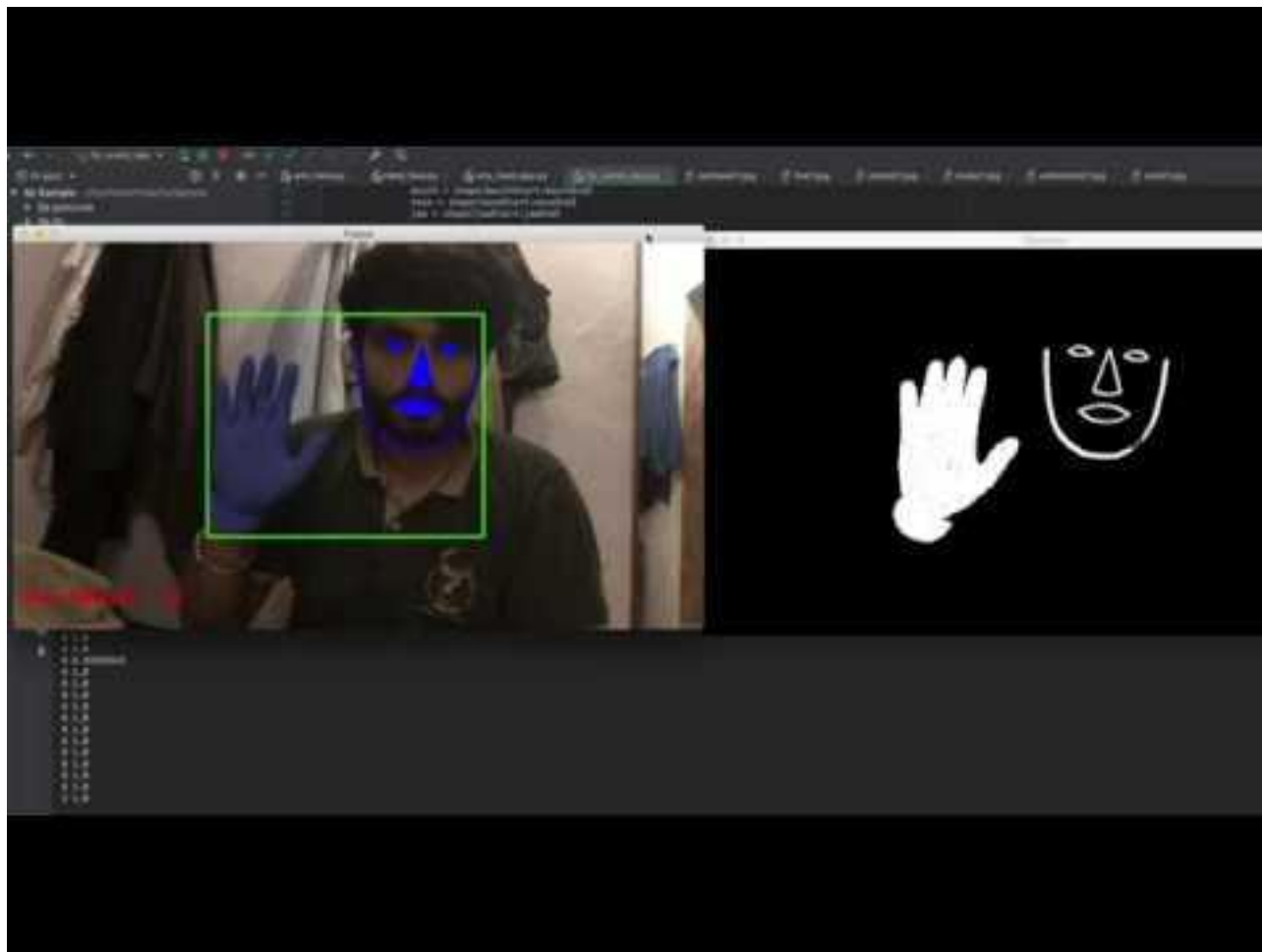
Man



Think



Study





# How You Could Help

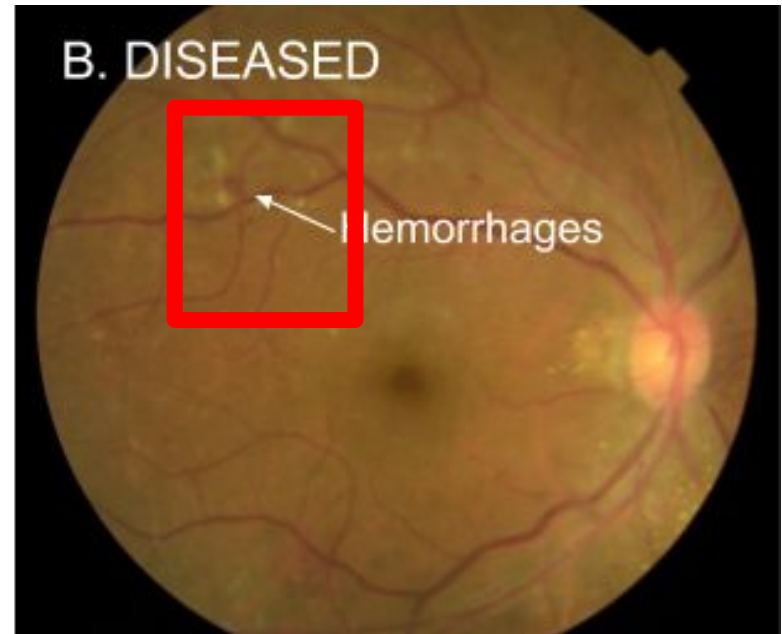
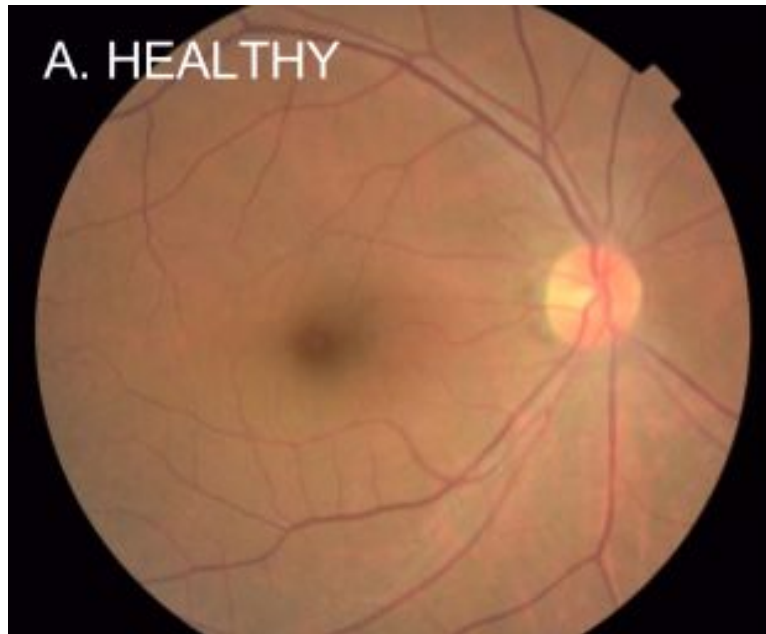
- Identify Problems
- Rough Draft of the Solution
- What do you have and What do you need?
- Learn Skills and get assistance
- Start...!!!

# Google AI Lab : Bangalore

- Detecting diabetic eye disease
- Flood forecasting
- Teaching kids to read



# Detecting diabetic eye disease



# Flood Forecasting



# Teaching kids to read



A man with dark hair, wearing a dark shirt, is shown from the chest up. He is holding a mobile phone to his ear with his right hand. He has a serious, intense expression on his face, looking slightly to the side. The background is dark and out of focus, suggesting an indoor setting at night.

**I HAVE A VERY PARTICULAR SET OF SKILLS.**

**I WILL FIND YOUR QUESTIONS,  
AND I WILL ANSWER THEM.**

# Feedback



[akshaybahadur.com](http://akshaybahadur.com)



# See you next time



**Content :**

[bit.ly/tfug-chennai](https://bit.ly/tfug-chennai)

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Experts



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