



# Vuforia

- SDK de Realidade Aumentada
- Anexar conteúdo digital objetos físicos
- Visão Computacional → marcadores e objetos 3D
- Posicionamento e interação do objeto virtual no mundo real



0049125A - Realidade Aumentada - Prof. Sementille, Ivan Aguilar e João Pedro Mucheroni Covolan





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# **Image Targets**

É a maneira mais fácil de colocar conteúdo de realidade aumentada em objetos planos. (páginas de revistas, cartões comerciais e fotografias).



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Permitem que você insira o conteúdo AR em objetos com formas cilíndricas ou cônicas como latas, garrafas e cones









Funciona como um código de barras, ou seja, codifica dados além de servir como alvo. Pode ser usado em linhas de produtos, inventário, maquinário, etc.













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Acesse o s	site: <u>https://developer.vuforia.com/</u>
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	Jun 20, 2019
	Vuforia Engine 8.3 is Available!
	Summer is here, the sun is out, and so is Vuforia Engine's newest release! The team has been eagerly awaiting this announcement, as it's one of our <i>smartest</i> advancements with AR.
	Advanced Model Targets 360 - Recognition Powered by Al
	Brand New Model Target Generator Interface
	Improvements to Platform Specific Illumination Classes     Upgrade to ARCore 1.7
	In our last major release, we announced Advanced Model Targets that allowed for multiple views. Using AJ, we enabled developers to choose several guide views that would appear when the user approached a physical model.
	Now – no guide views needed. Advanced Model Targets 360 can recognize a physical object at any angle, complete 360, without a guide view. As shown in the video below, a
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# Adicionando o pacote Vuforia

A partir da versão 2019.2 do Unity, o Vuforia deixou de ser instalado como um módulo e passou a ser tratado como um pacote, que deve ser adicionado ao projeto

Para adicionar o pacote, há duas formas,que serão ilustrada a seguir:

- Através das configurações de construção modo 1
- Através da janela de gerenciamento de pacotes modo 2





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# **Exercício 2**

Criar um novo projeto no Unity (Vuforia\_Botao\_Virtual)

Importar adicionar pacote do Vuforia (SDK)

Importar pacote do marcador (banco de alvos)























### **Exercício 2**

Script: Controle\_Botao\_Virtual

27	// Procura os GameObjects, filhos, específicos e associa-os as var
28	<pre>Dbjeto_1 = transform.FindChild("Cubo_Esquerdo").gameObject;</pre>
29	<pre>Dbjeto_2 = transform.FindChild("Esfera_Direita").gameObject;</pre>
30	
31	// Desativa os GameObjects, assim não aparece ao iniciar, é neces
32	Objeto_1.SetActive(false);
33	Objeto_2.SetActive(false);
34 }	

Procura os GameObjects, filhos, específicos e associa-os as variáveis Desativa os GameObjects, assim não aparecem ao iniciar, é necessá rio primeiro acionar um dos botões virtuais









### **Exercício 2**

Pode ser interessante adicionar um cubo sobre cada botão virtual (como filho do botão, por exemplo), para que seja possível visualizá-lo durante a execução, já que seu render padrão só poder ser visto durante a edição da cena.









# Trabalho de RA

### Jogo do labirinto em RA

Deverá ser criado um jogo em Realidade Aumentada, usando Unity e Vuforia, baseado no jogo do labirinto desenvolvido na segunda aula. A ideia é que a caixa com a bolinha seja associada a uma marcador e seja rotacionada através da própria movimentação do marcador em vez de se usar o teclado.

Não poderá ser usada nenhuma das duas fases desenvolvida em aula

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# Trabalho de RA

### Jogo do labirinto em RA

Requisitos obrigatórios que devem estar presentes no jogo:

- Deverá ser usado algum marcador sólido em vez do marcador plano, como cubo, cone ou cilindro
- Para passar para a próxima fase, a bolinha deverá cair em um buraco
- Ao menos uma das fases do jogo deve ter obstáculos dinâmicos
   Exemplo: obstáculo que se movem, aparecem e desaparecem, etc.
- Criar mais de uma fase

# Trabalho de RA

### Jogo do labirinto em RA

Dicas e sugestões

- Para se criar um buraco vazado no fundo da caixa, pode-se utilizar pacotes prontos do Unity, encontrados na Asset Store, que permitem realizar operações booleanas entre sólidos (como subtração de um sólido de outro)
- O formato da caixa não precisa ser retangular. Se você utilizar um marcador cilíndrico, pode ser interessante criar uma caixa cilíndrica em torno dele
- É possível mudar as configurações do Vuforia para que ele gere uma saída estéreo, que pode ser usada em um óculos de realidade aumentada/virtual

