

MODELLING REALITY IN VISUAL PYTHON

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OUTLINE

1 VISUAL PYTHON

2 SELECTED STUDENTS PROJECTS

- Vehicle Fuzzy Controller
- Waves propagation
- Plant growth modelling
- Maze generation and solving
- Artificial Neural Network
- Electrostatic game

3 MOVIE PRESENTING SELECTED PROJECTS

4 CONCLUSIONS

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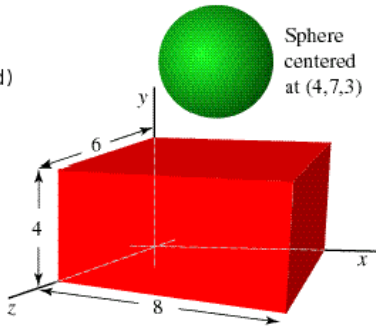
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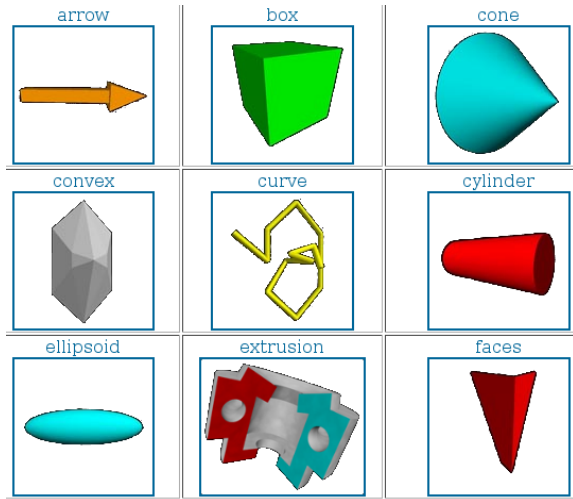
VISUAL PYTHON

Visual Python (VPython) is the Python programming language plus a 3D graphics module called Visual.

```
from visual import *  
redbox = box(pos=vector(4,2,3), \  
             size=(8,4,6), color=color.red)  
ball = sphere(pos=vector(4,7,3), \  
             radius=2, color=color.green)
```



VISUAL PYTHON OBJECTS



VPython 3d Objects

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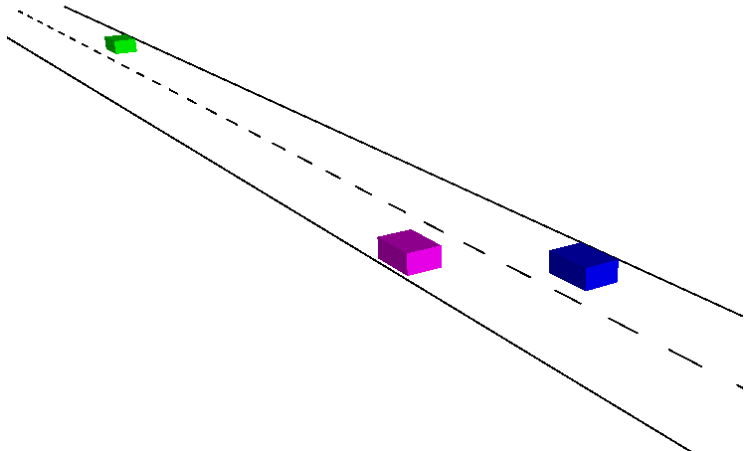
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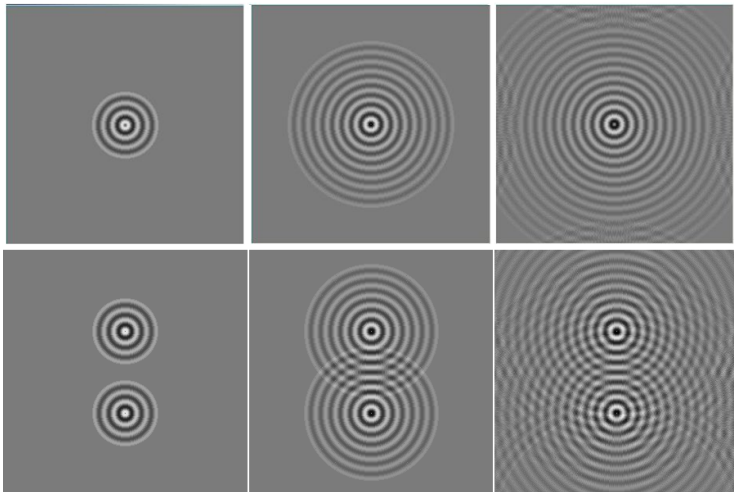
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FUZZY CONTROLLER (BARTOSZ KOZIAK)

Simulation of vehicles overtaking on a two-way road

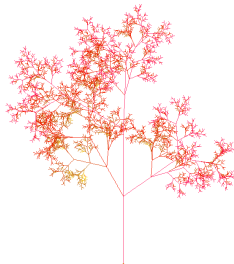
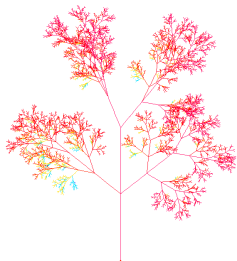
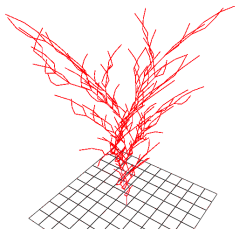


WAVES PROPAGATION (CEZARY DRAUS)

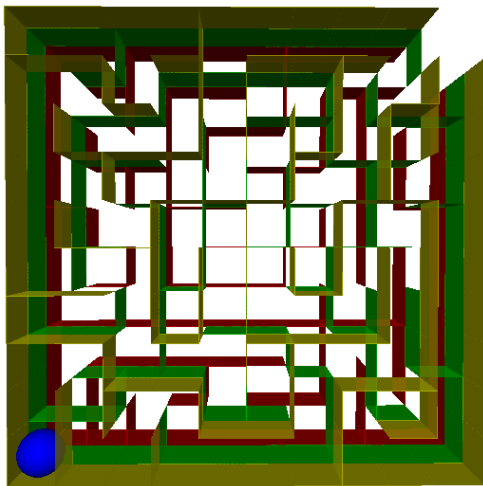


PLANT GROWTH MODELLING (L-SYSTEM)

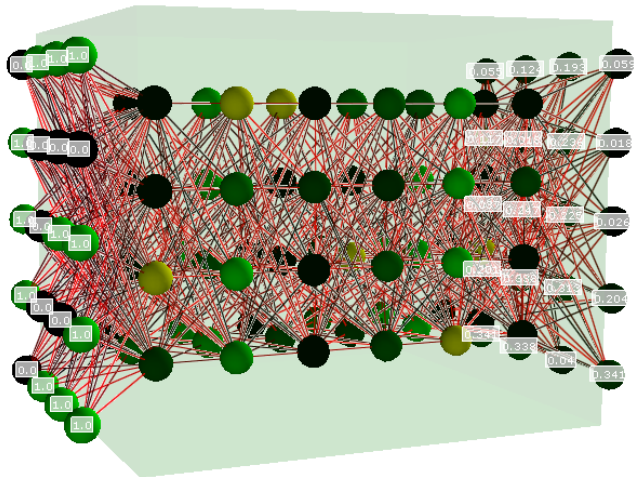
MICHAŁ ŁOJANOWSKI, PIOTR LESZCZYŃSKI



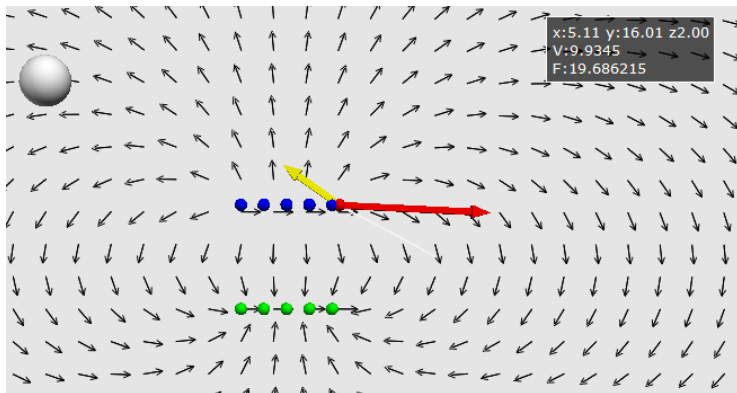
MAZE GENERATION, PATH FINDING (J. KIMMER)



NEURAL NETWORKS VISUALIZATION (G. RYBAK)



ELECTROSTATIC FIELDS (M. NOWAK)



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(Movie)

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- Visual Python allows creating interactive 3d animations very easily
- **The simplicity of VPython has made it a great tool for the illustration of simple physics, especially in the educational environment**

Thank you for your attention