

Poit Cloud based Vision

Pointcloud-based self-calibrating Vision

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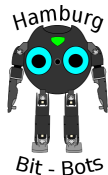


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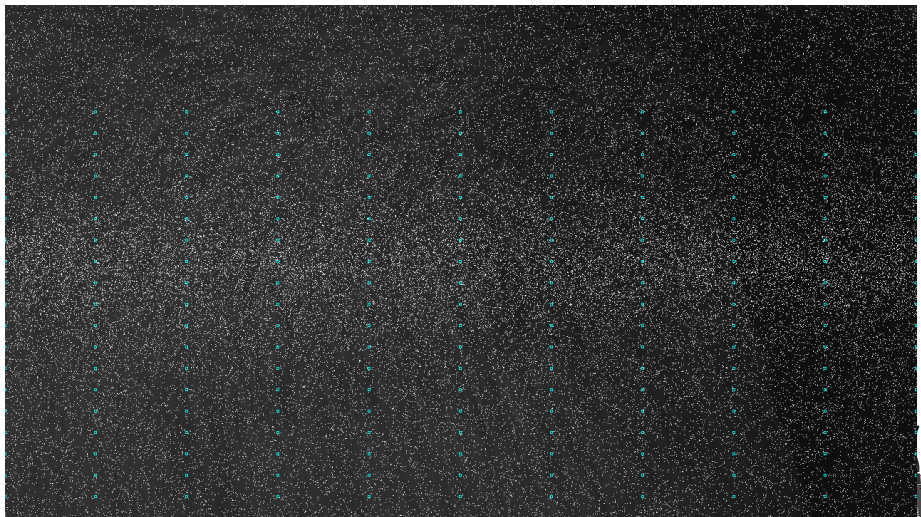
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Pointclouds

- Pre generated set of Points
- Random distributed
- Pregenerated
- Sorted for faster access





Bit - Bots

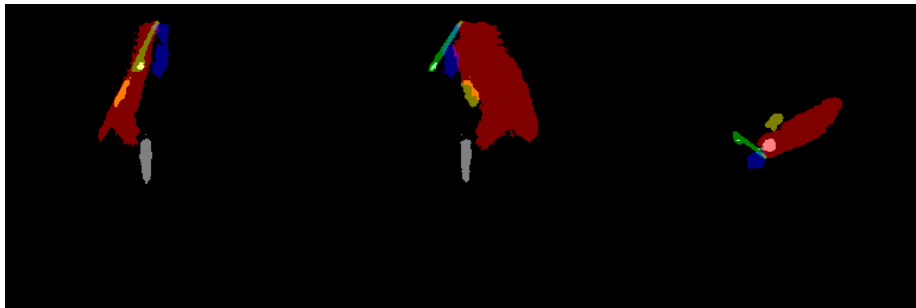
Classifying

- Color lookup Tables
- Classify each Pixel from Pointcloud
- Generate lists for each Pixelclass



Lookuptables

- 3 Tables
- Colors chanel against each other (Y/U; Y/V; U/V)
- Flag for each Combination
- If Flag ist set in all 3 Tables, Pixel is in Class



Bit - Bots

Ball

- Clustering the Ball Points
- Circle Tests
- Search for Green Background



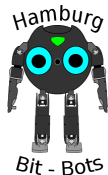
Pros and Cons

- Pros
 - Scan different parts of field in different density
 - Change Scan density online
- Cons
 - lot of space
 - creation needs some Time
 - a lot of methods for scanlines don't work



Self Calibrating

- Automatic generation of Lookuptables
- Currently only for Carpet
- Based on Masterthesis from Thomas Reinhardt, HTWK Leipzig



Work in the Future

- Self Calibrating other Colors
- Test different densitys
- Find and Use Teammarkers

