

Leading nature-based smart city solutions

"Machine Learning alkalmazása a városi zöldterület-gazdálkodásban"

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The greehill Digital Twin Technology accelerates the digital transformation of green asset management.

We help cities amplify the impact of nature-based solutions on sustainability, biodiversity, resilience, and citizen well-being.

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greehill. Leading nature-based smart city solutions.



People 40+ Locations Budapest, Singapore, Berlin, San Francisco, Paris



Trusted by NParks, Singapore

Anchor technology for United Nations WSIS Prizes, won by NParks

www.wsis.oro

mate-k

Awarded by EIT Climate-KIC



We capture a cm-accurate point cloud of the entire urban environment



We create 3D digital twins of green urban assets using the latest AI technologies

Platanus orientalis

> Alnus cordata

Platanus orientalis

All information at your fingertips



greehill 3D digital twin of a tree

All information at your fingertips



greehill 3D digital twin of a tree

Sensors to capture digital twins





MLS - Mobile Laser Scanning

TLS - Terrestrial Laser Scanning

ML pipeline



1. Tree location proposal

Sparse convNets

Other Lidar specific features also used besides geometric information (like intensity)

< 1 % False Negative Rate < 30 % False Positive Rate



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2. Segmentation - Semantic

Distinguish between surroundings / canopy / trunk, etc.

Sparse convolutional net

mIoU > 0.95



2. Segmentation - Instance

Separate trees in close position, too

Sparse convolutional net

mIoU > 0.9





4. Fusion

Process semantic segmentation based on image

Project Lidar points identified as tree

Crosscheck points and semantic labels on images



Frontend implementation

Input data





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	Tree dB	
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2D / 3D web-maps

Applied tools

3D visualization

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Web application



mapbox GL JS

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Let's start creating a greener future today

Get in touch gyula.fekete@greehill.com Gyula Fekete Linkedin

Come to our Open Day and talk about green tech 16 June 2022 - Developers Open House

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Let's green a greener future together

Love tech? Let's talk.

