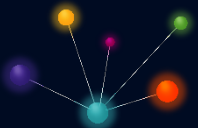


# AI in Three Dimensions

Burns Foster, Axel-Christian Guei, Leihan Chen

Canadian Hydrographic Conference 2020 - Québec City





# A BRIEF HISTORY

Jan 2018

- Support Vector Machine
- 3D points
- Sonar
- Terrestrial Lidar

Dec 2018

- First beta

September 2019

- Side scan prototype
- 2D imagery

Jan 2020

- Sonar Noise Release

Jan 2019

- Deep Neural Networks
- 3D points

June 2019

- Bathymetric Lidar
- Time Series
- Noise beta 2

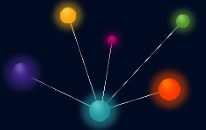
Nov 2019

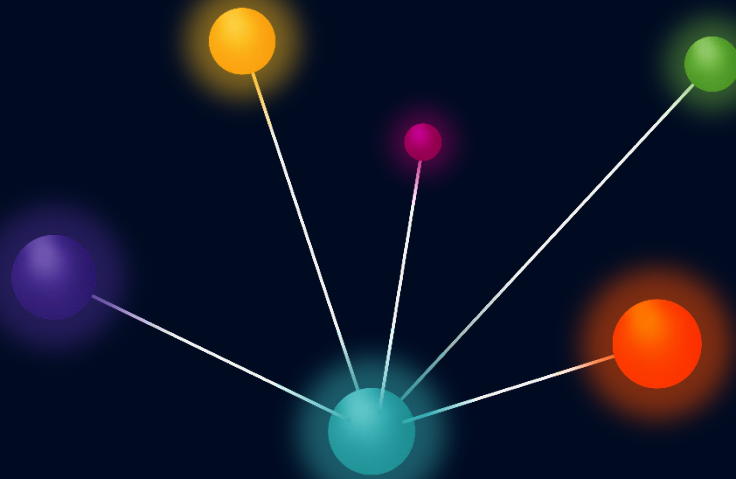
- Bathymetric Lidar
- 3D points

3D

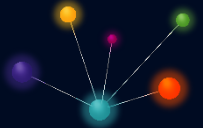
2D

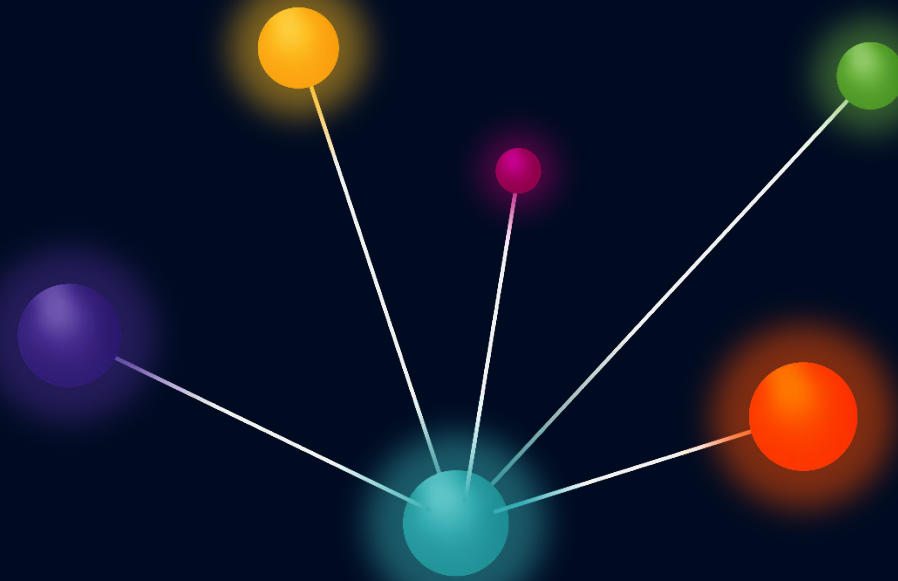
1D



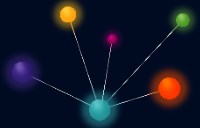


# CARIS Mira AI

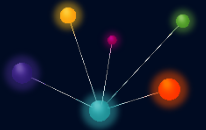
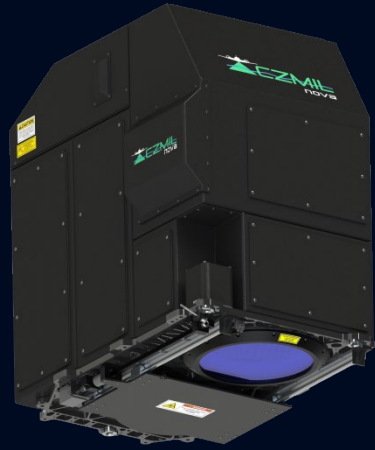




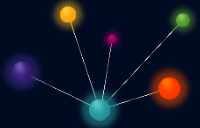
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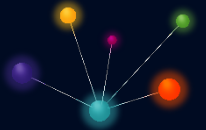
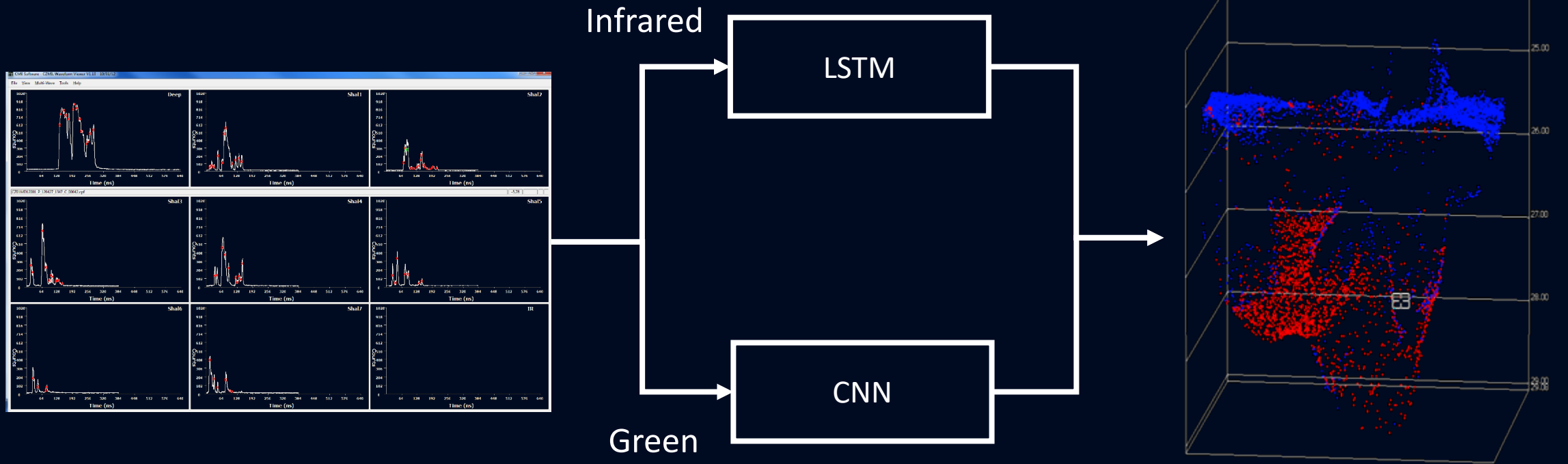
# CZMIL



# CZMIL – LAND & WATER



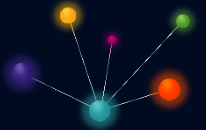
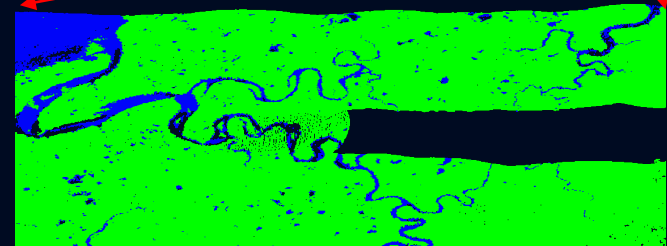
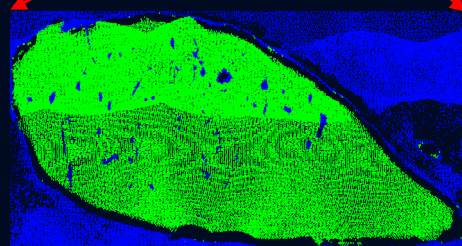
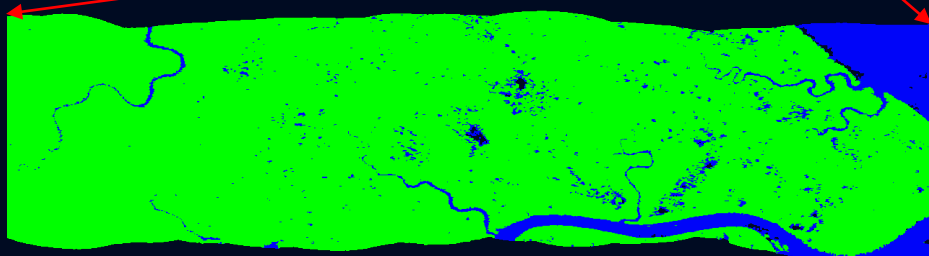
# METHODOLOGY



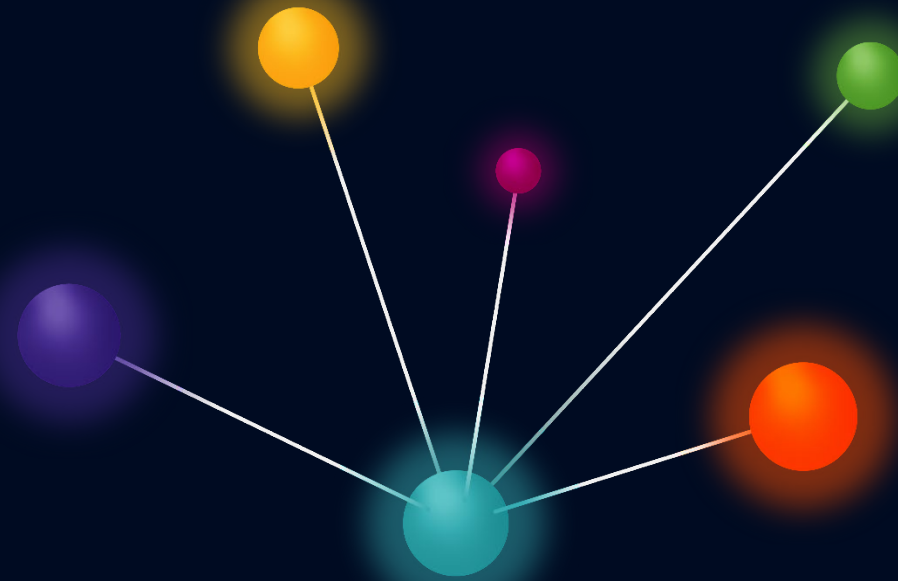
# RESULTS

Human

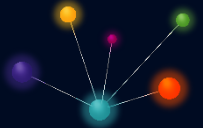
AI



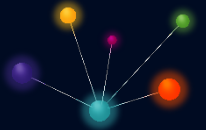
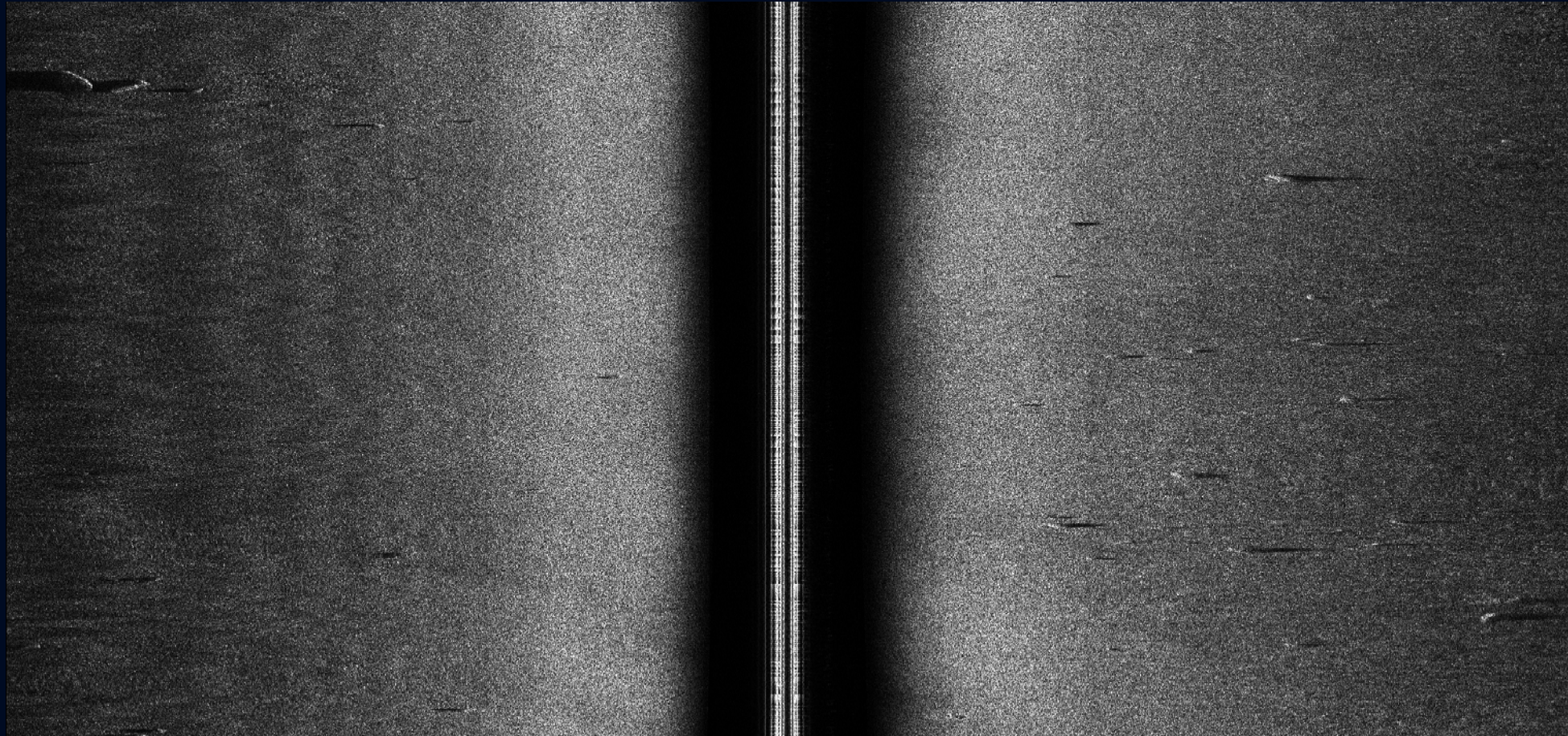




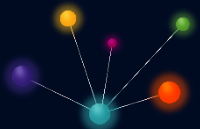
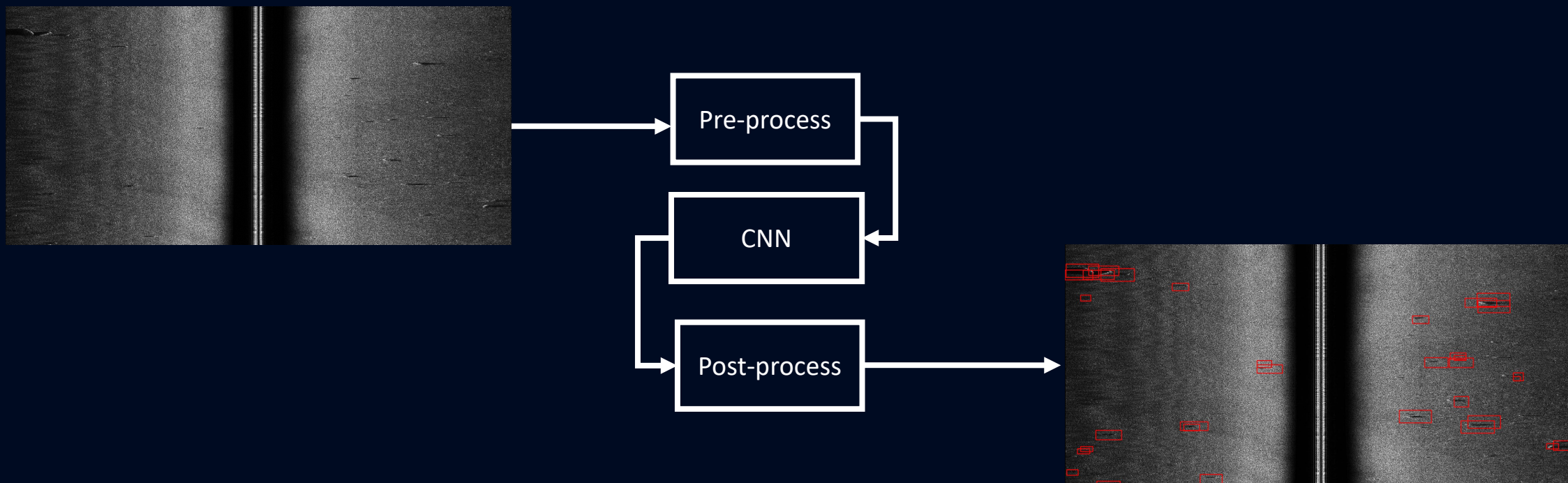
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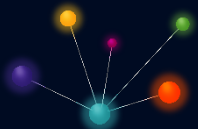
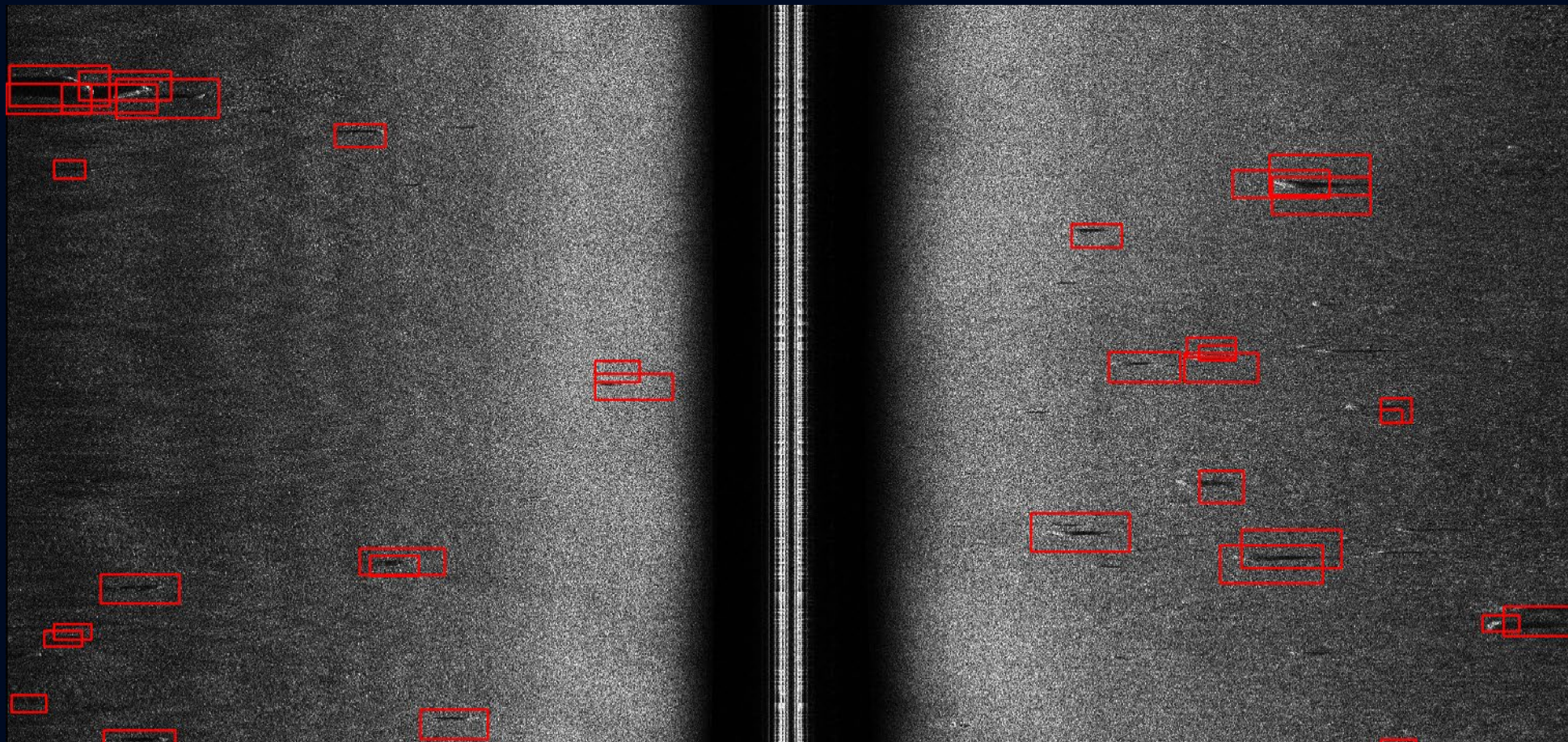
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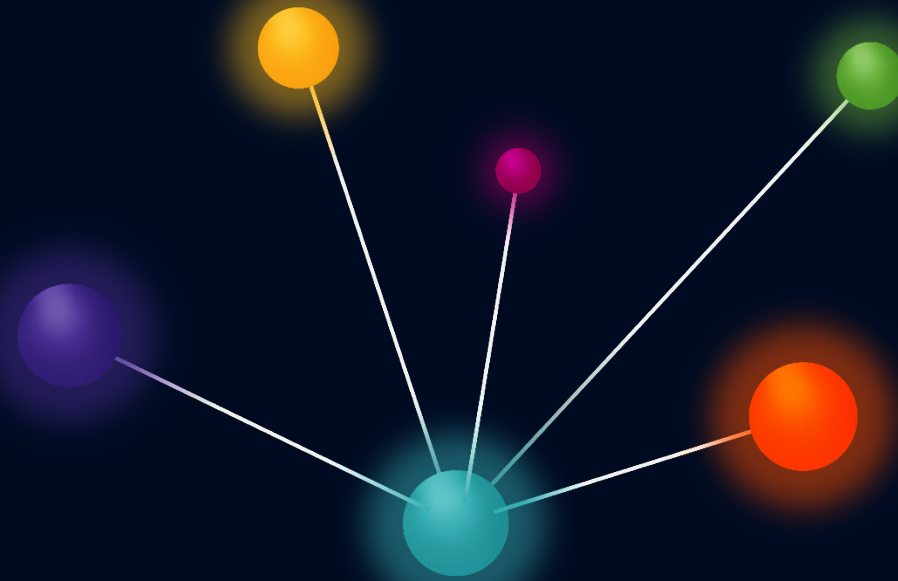


# METHODOLOGY

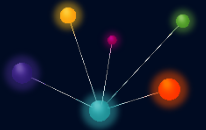


# FEATURE DETECTION

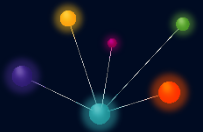
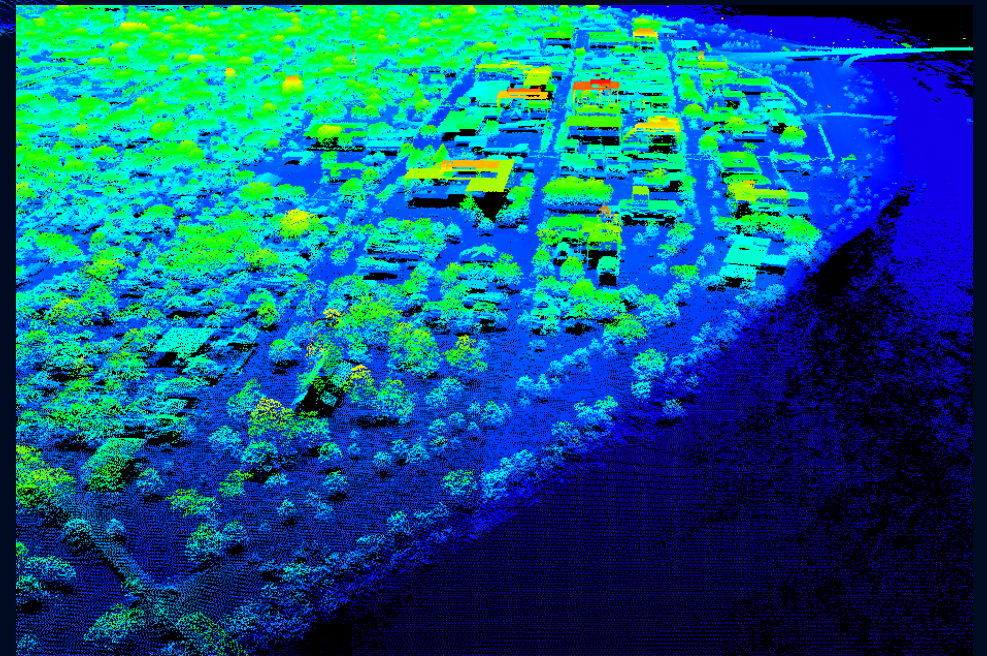
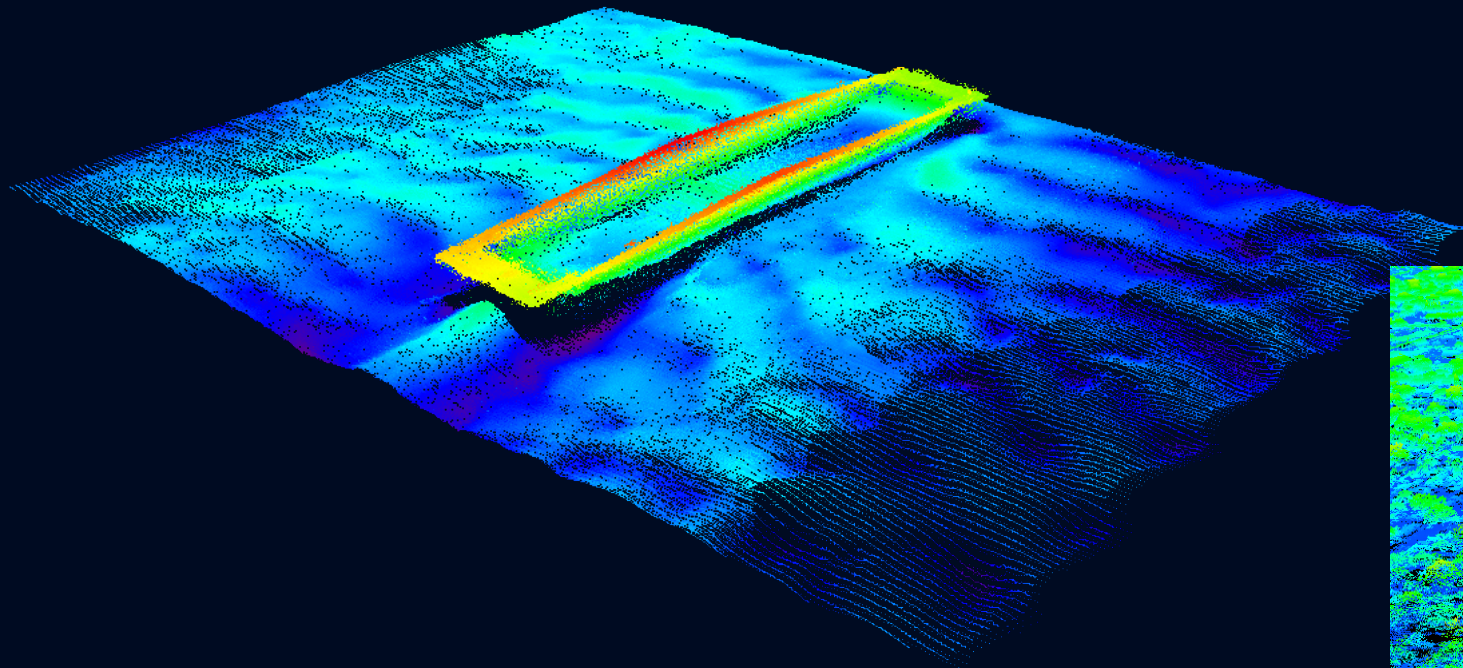




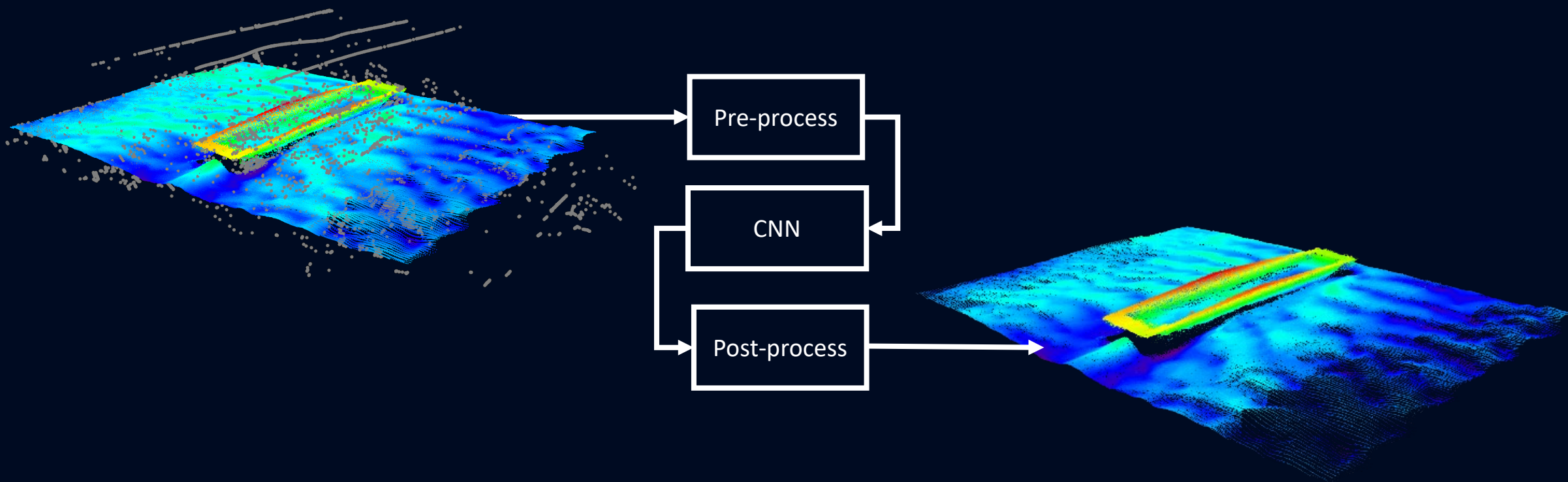
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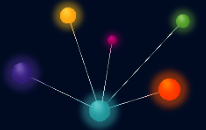
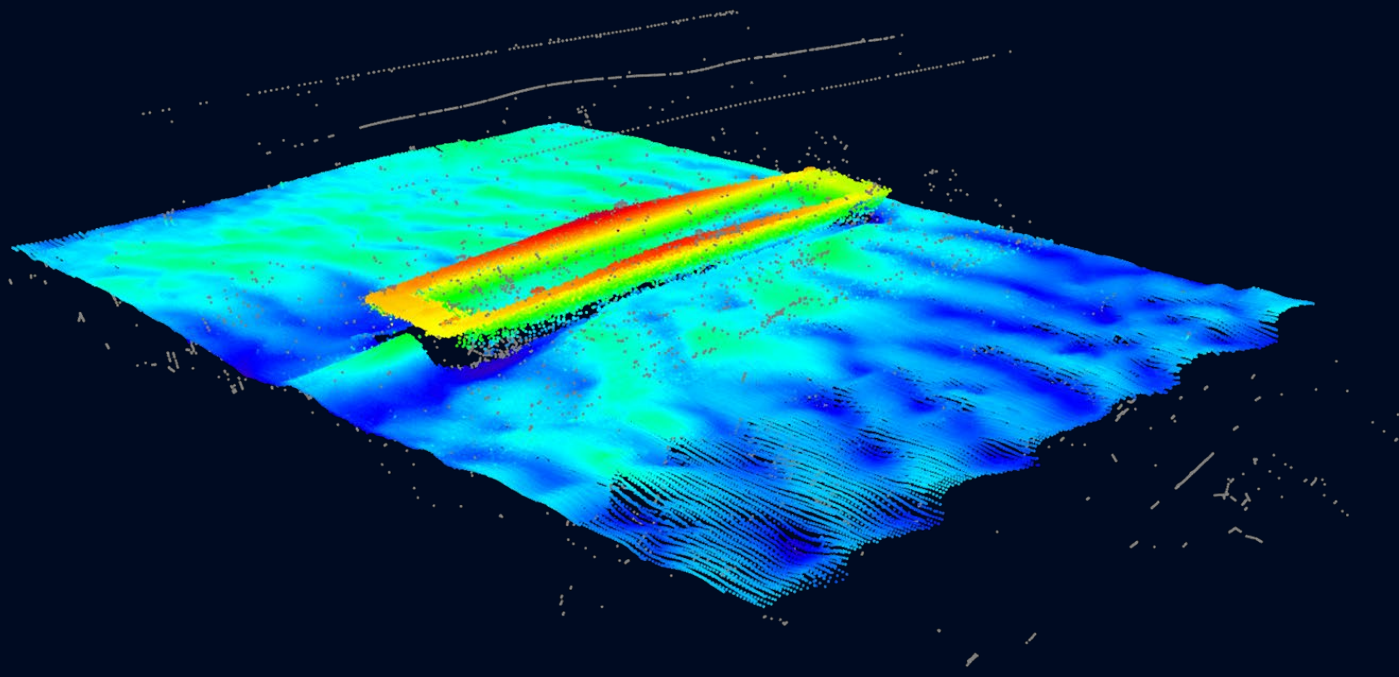
# 3D POINT CLOUD



# METHODOLOGY

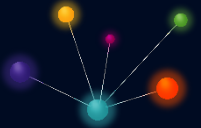
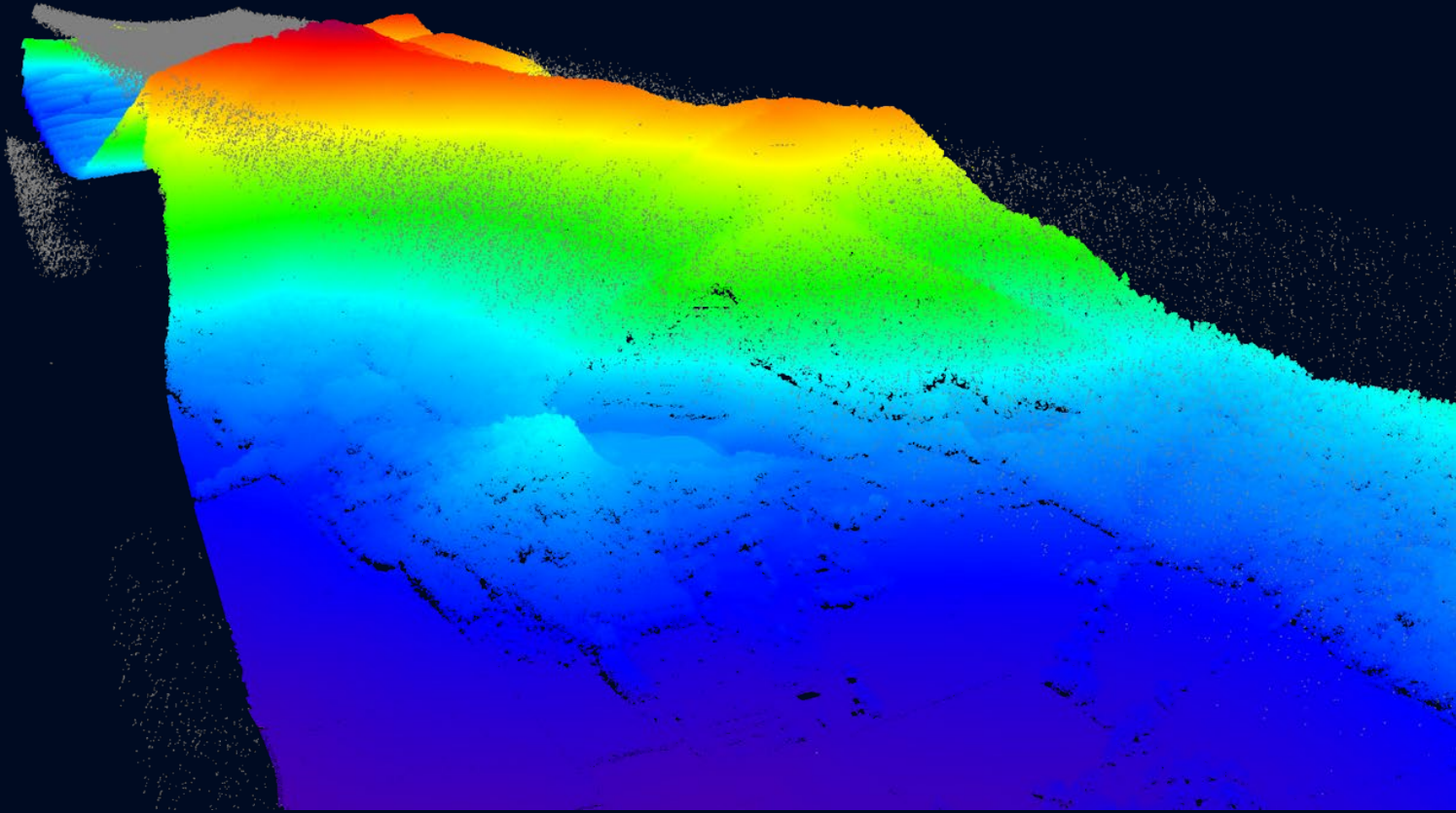


# NOISE REDUCTION - SONAR

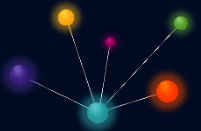
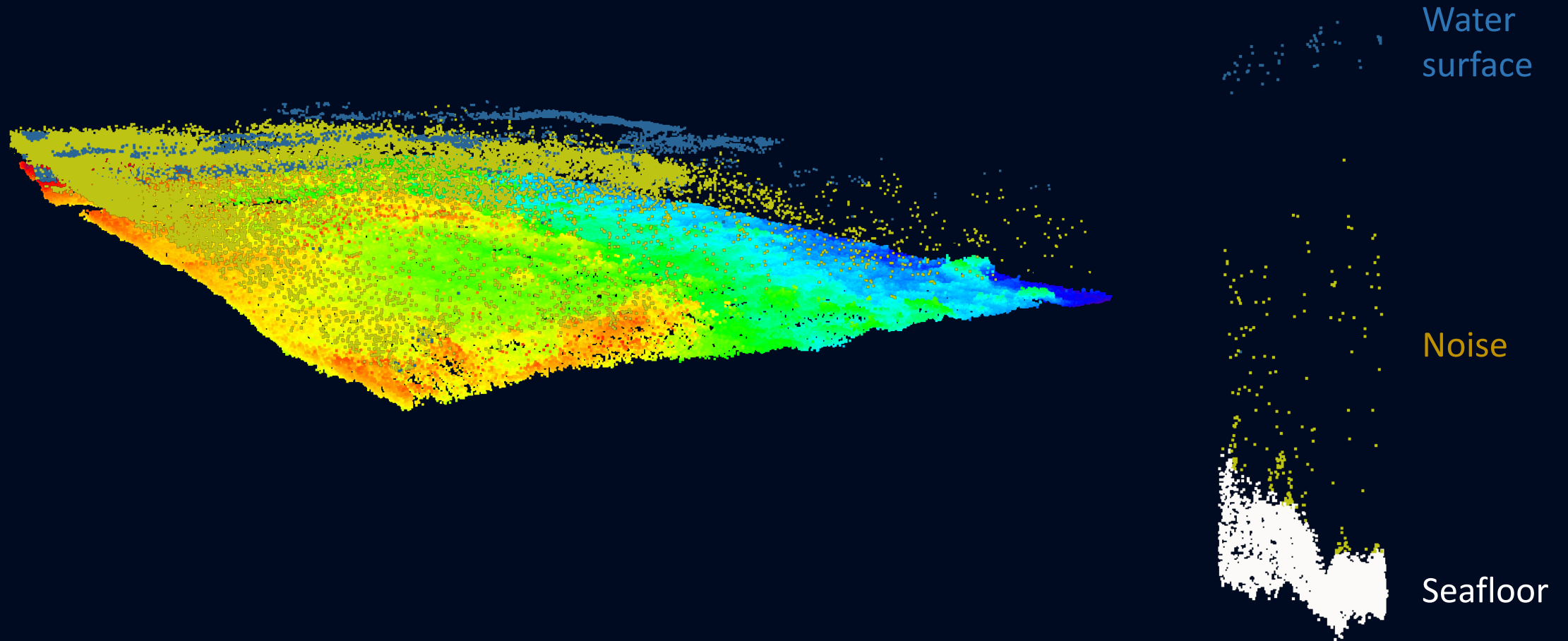




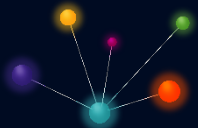
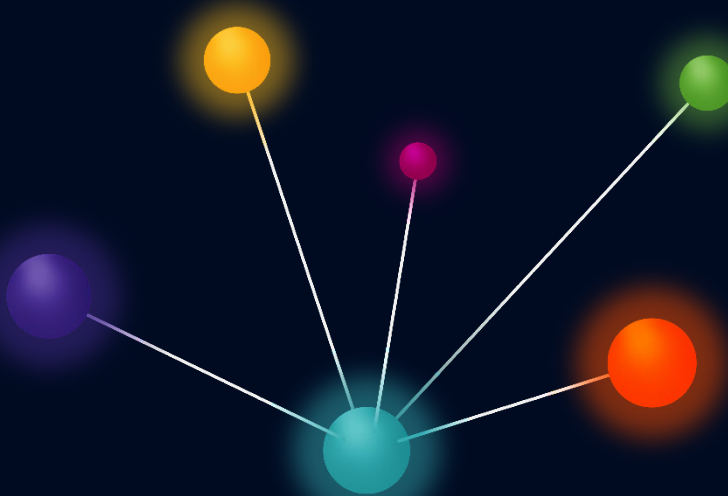
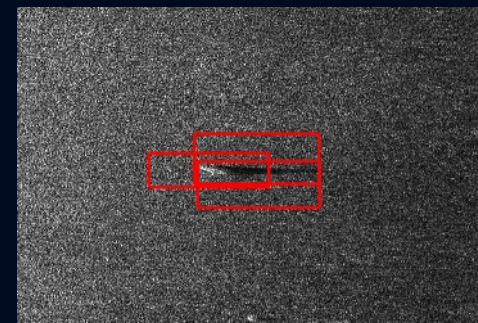
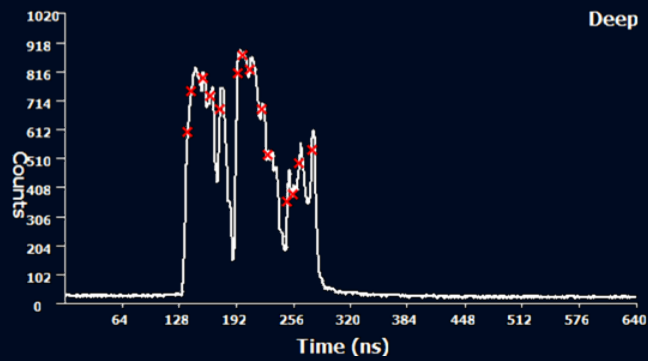
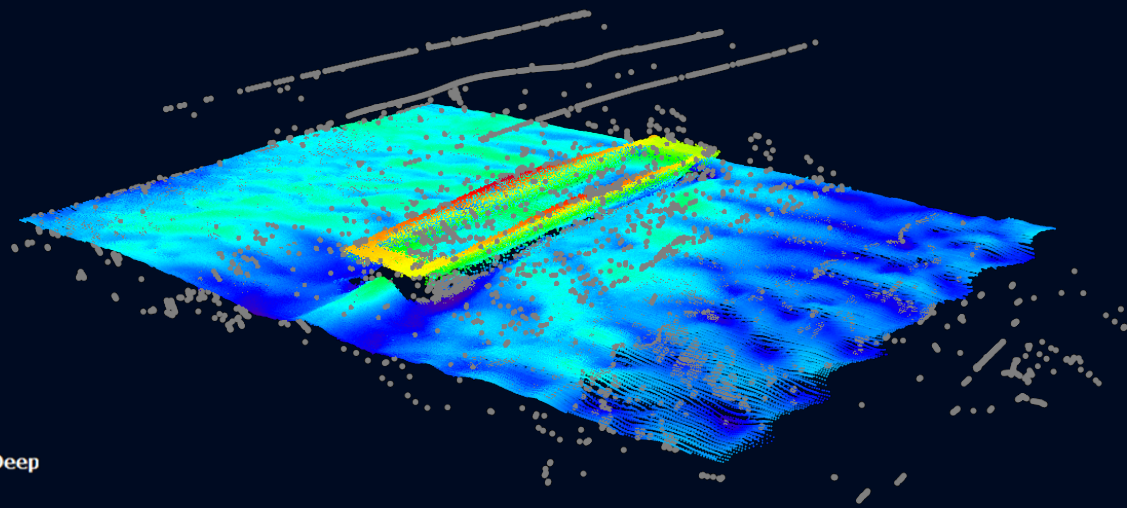
# NOISE REDUCTION – LIDAR (TERRESTRIAL)



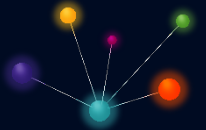
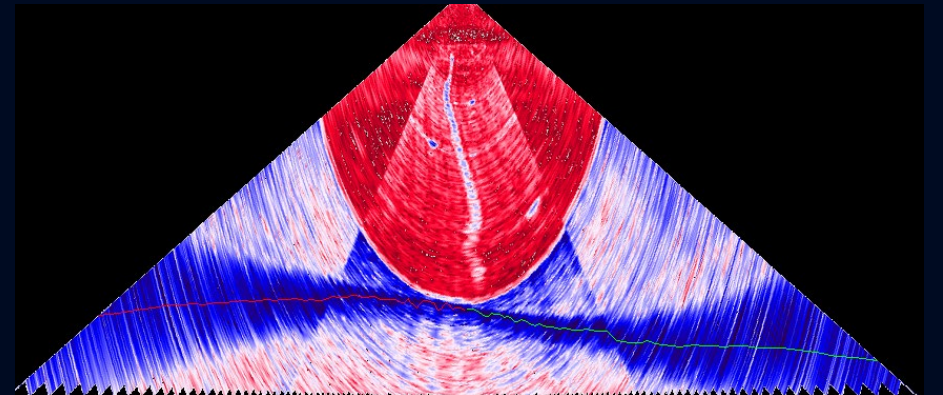
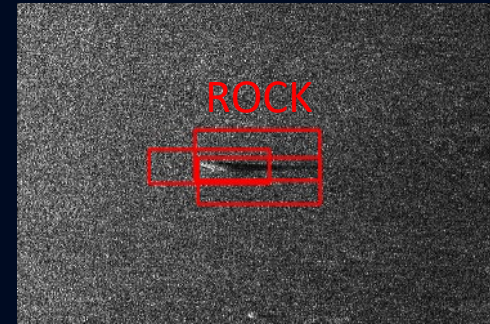
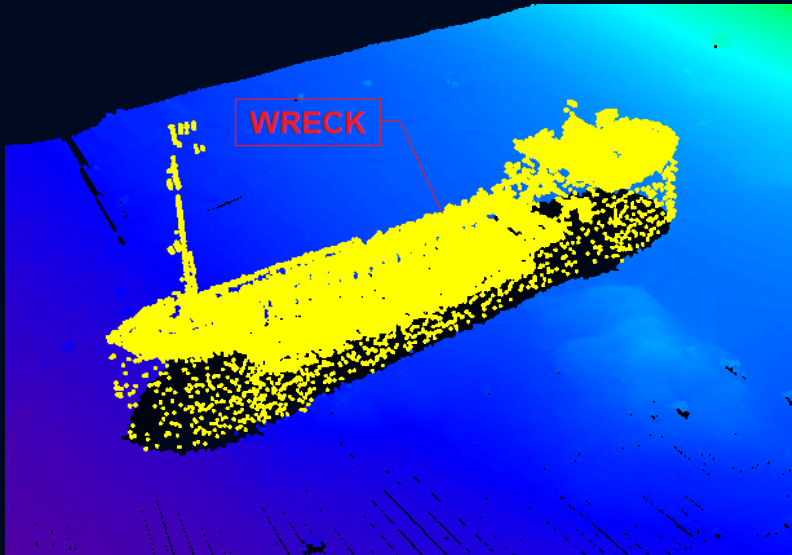
# NOISE REDUCTION – LIDAR (BATHYMETRIC)

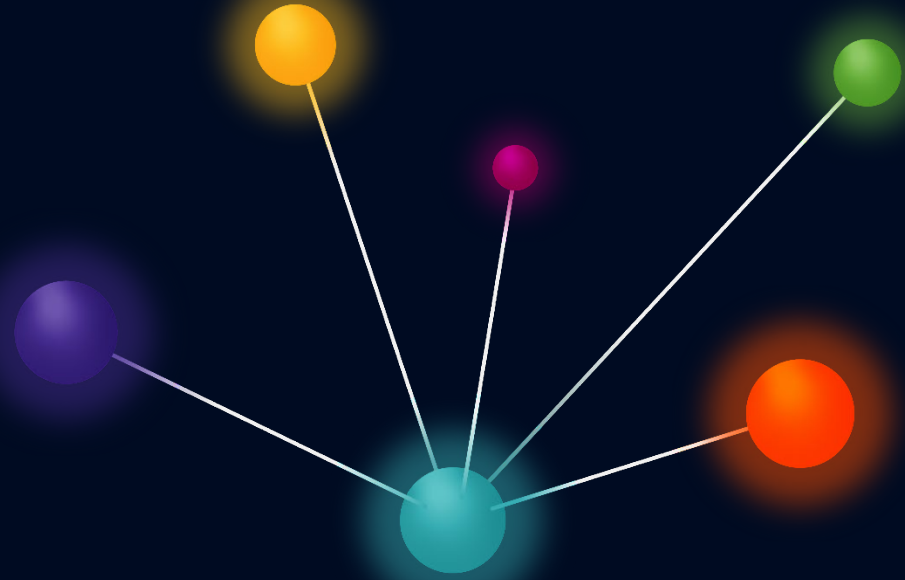


# SUMMARY



# WHAT'S NEXT?





carismira.ai

