DataVis – SpotiVis

Visual Computing Research Group
Ulm University

- Visualize your music library from Spotify
- Song features
  - Acousticness
  - Danceability
  - …
- Extend existing (web-) application with new features
  - Suggestions for new songs
  - „Clean-up“ of playlist by finding outliers and the like
  - …
- Technologies: JS / D3.js, Vue.js, HTML, CSS, sqlite

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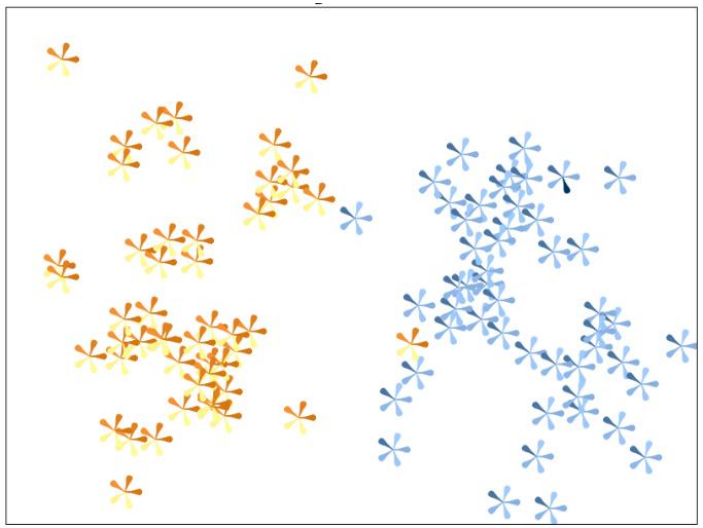

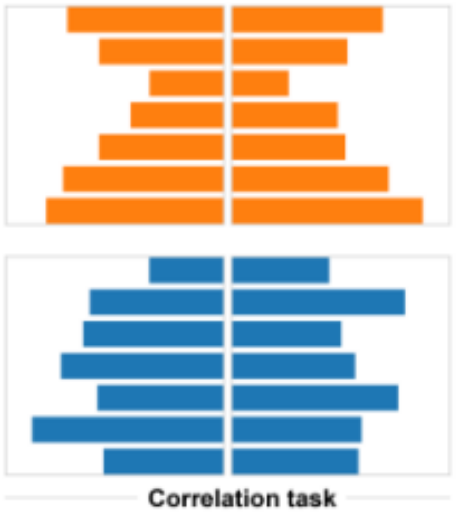

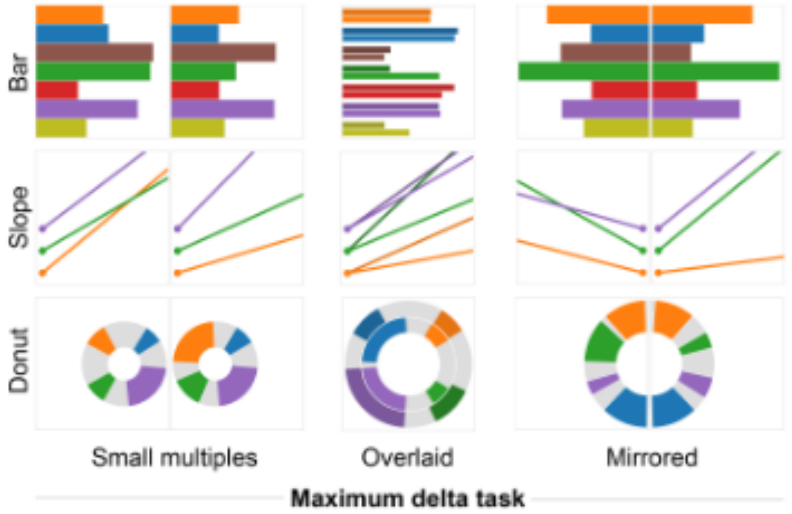

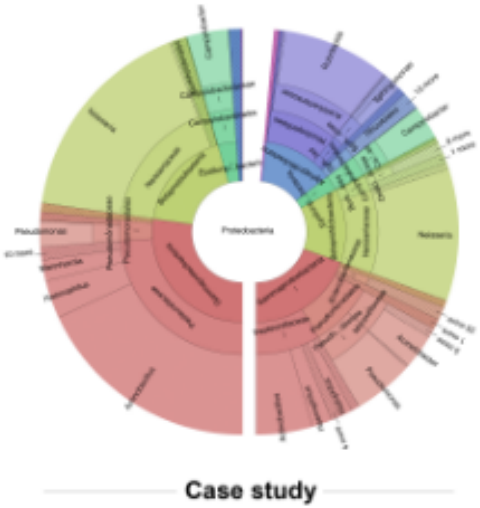

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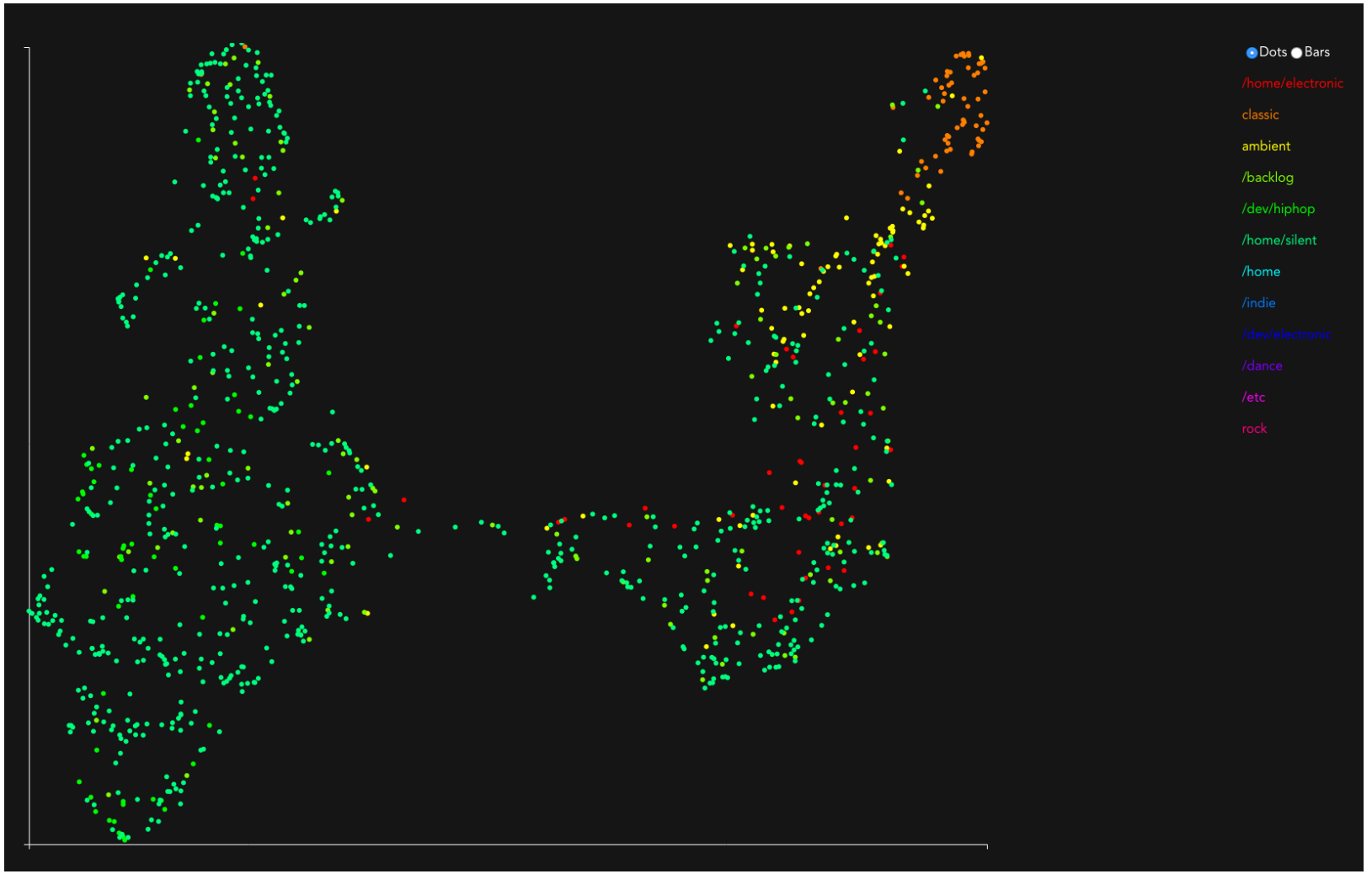

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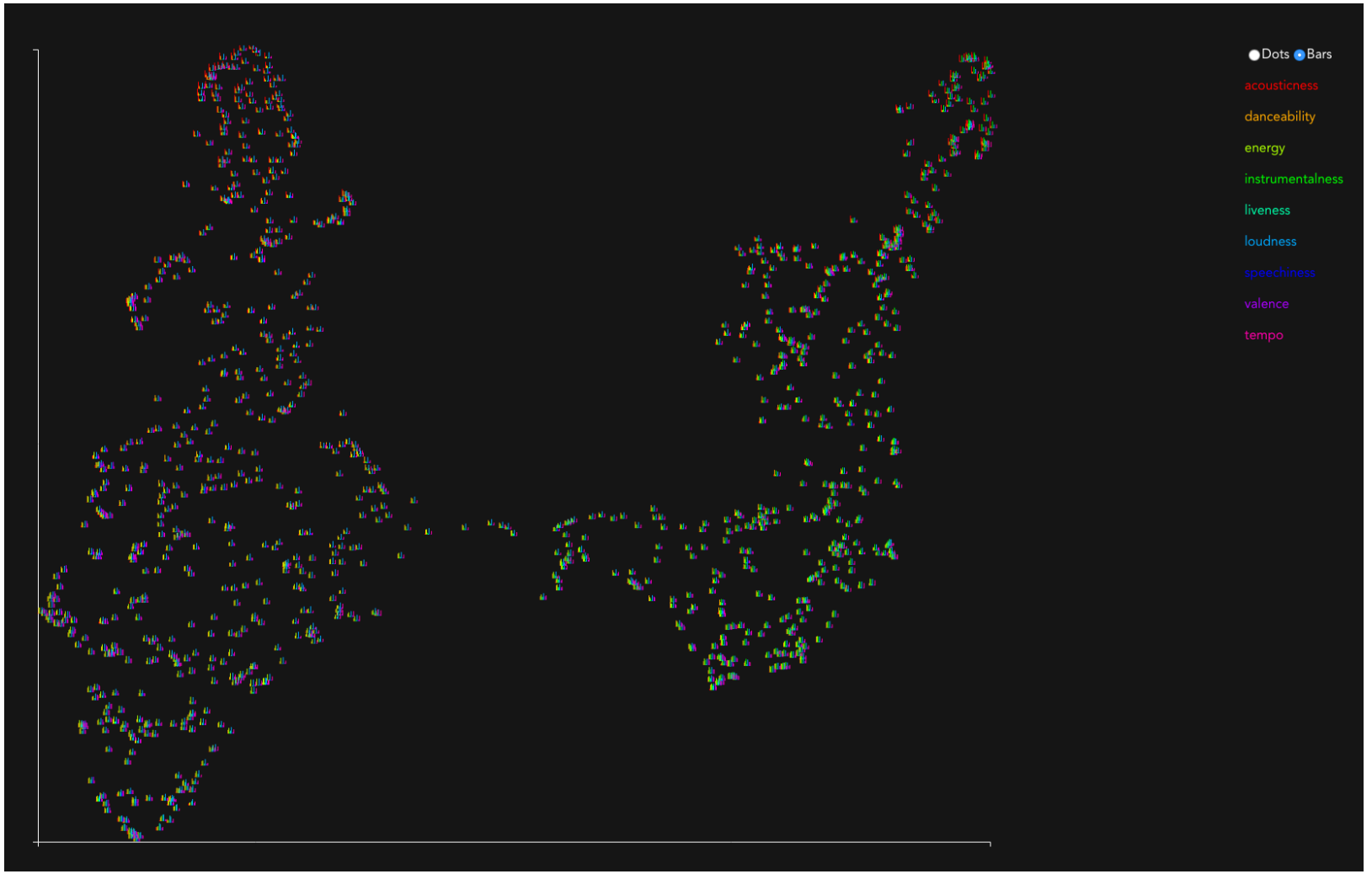

DataVis – FeatureVis2Info

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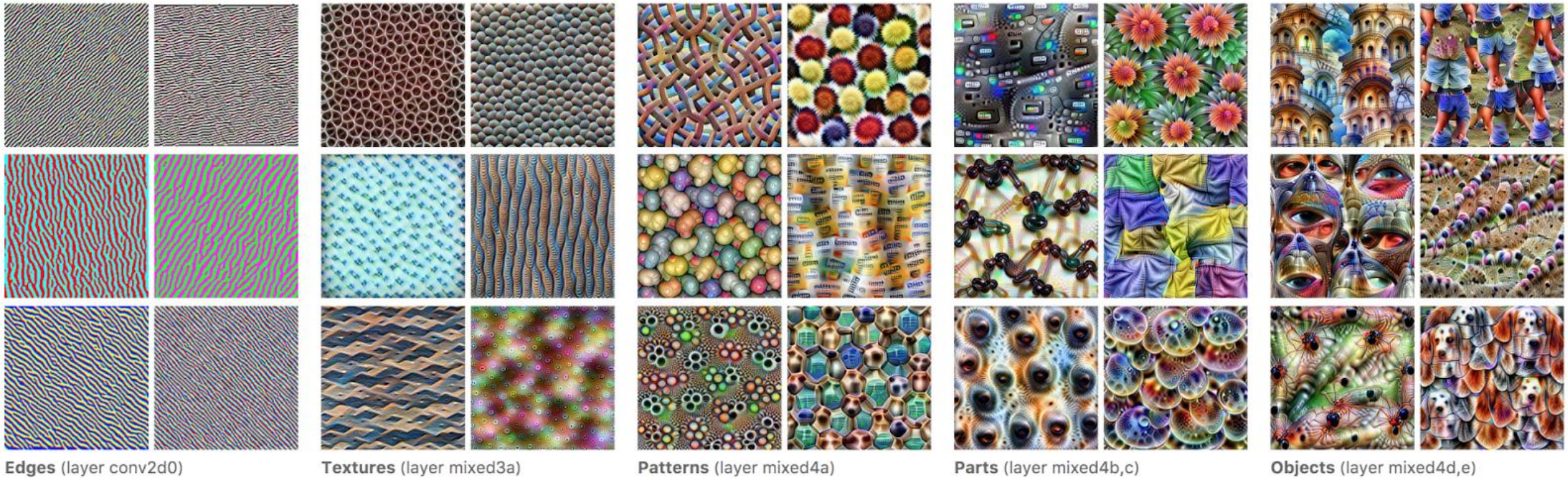
- CNNs learn similar features across different architectures and data sets
  - Edge- and curve detectors
  - Eyes, dog snouts



DataVis – FeatureVis2Info

Visual Computing Research Group
Ulm University

- CNNs learn similar features across different architectures and data sets
  - Edge- and curve detectors
  - Eyes, dog snouts
- Match filters in different networks
- Similarities and differences
- Insights about training data
- Deeper understanding what these networks learn
- How can we interpret it?

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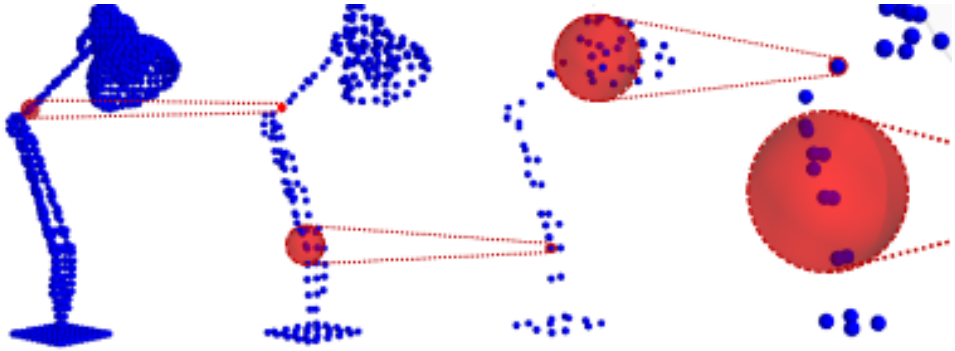
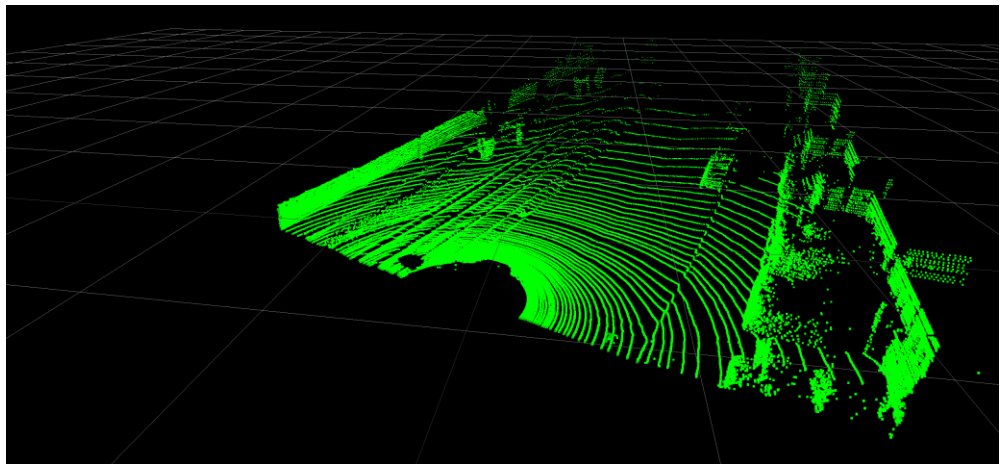
DataVis – 3D XAI

Visual Computing Research Group
Ulm University

- Explainability of neural networks only for (2D) image-based networks
- Recently: unstructured 3D convolutions
  - Points clouds
  - Autonomous driving
  - Analyzing molecule structures





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DataVis – 3D XAI

Visual Computing Research Group
Ulm University

- Explainability of neural networks only for (2D) image-based networks
- Recently: unstructured 3D convolutions
  - Points clouds
  - Autonomous driving
  - Analyzing molecule structures
- What do these networks actually learn?
  Adapt concepts from image-based explainability techniques
- Better understanding what these novel architectures learn

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