

# Point-Based Graphics



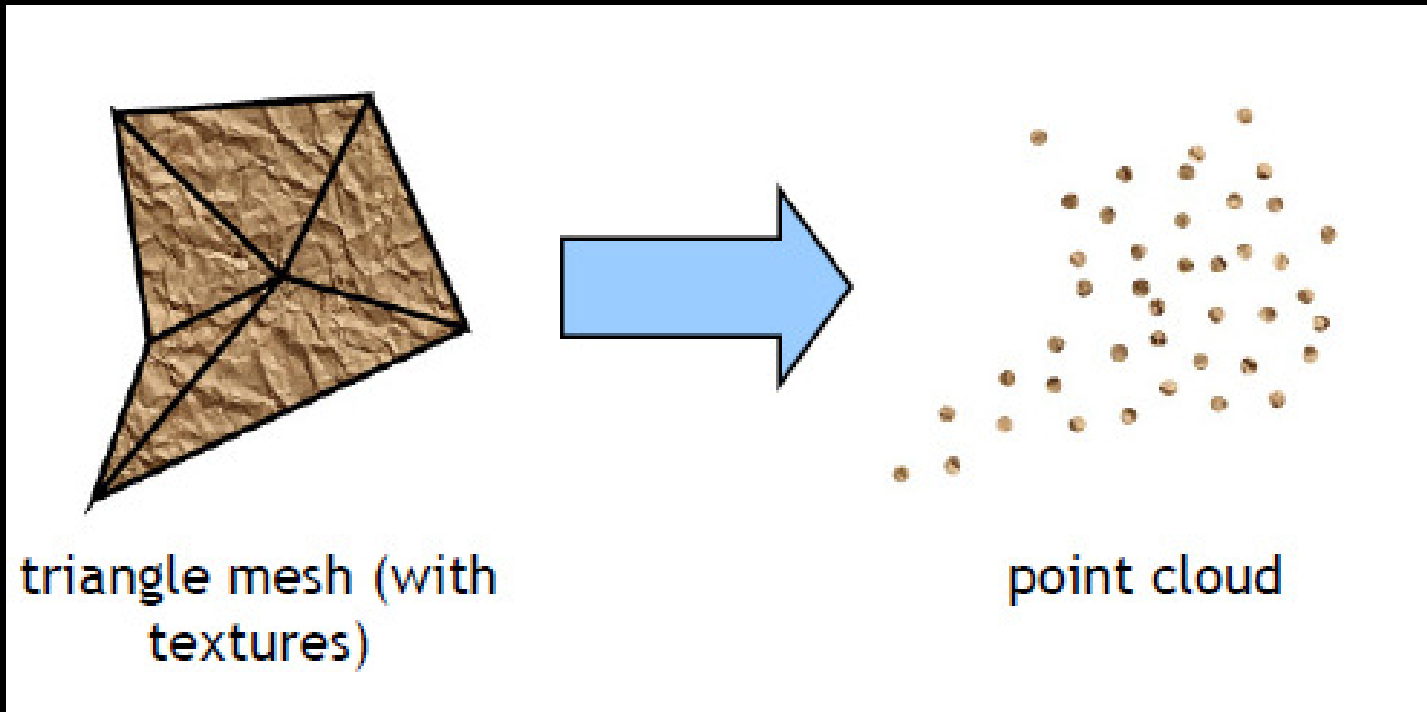
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# Motivação

- Procura de uma primitiva mais simples e eficiente que triângulos;
- Scanners 3D;
- Complexidade dos algoritmos reconstrução;

# Pontos como primitiva de Visualização

- Point clouds instead of triangle meshes [Levoy and Whitted 1985, Grossman and Dally 1998, Pfister et al. 2000]

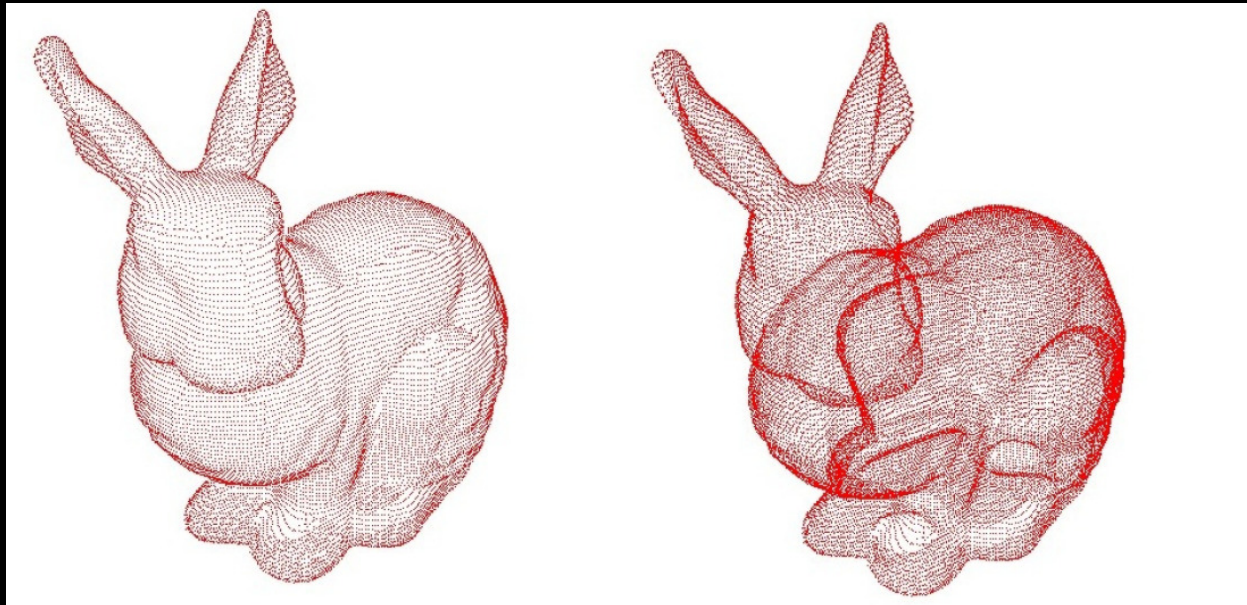


# Point Based Graphics

- Reconstrução da superfície;
- Point-Based Rendering;
  - Visibility of Point Sets;
  - Level-of-Details;
    - Point-Based;
    - Híbrido;
  - Color Blending;
  - Ambient Occlusion;

# Propostas

- Cálculo de visibilidade em Nuvem de Pontos;
- Rendering utilizando GPU Shaders;
- Level-of-Details em Point-Based Rendering.



# Referências

- PAJAROLA R.: Efficient level-of-details for point based rendering. In Proceedings IASTED Computer Graphics and Imaging (2003).
- Aguirre H, Gutierrez D, Perrin J.: Rendering Large Point Datasets with GPU Shaders. EG UK Theory and Practice of Computer Graphics (2010).
- S. Katz, A. Tal and R. Basri.: Direct visibility of point sets. ACM Transactions on Graphics 26 (2007), p. 24