POINT NORMAL TRIANGLES

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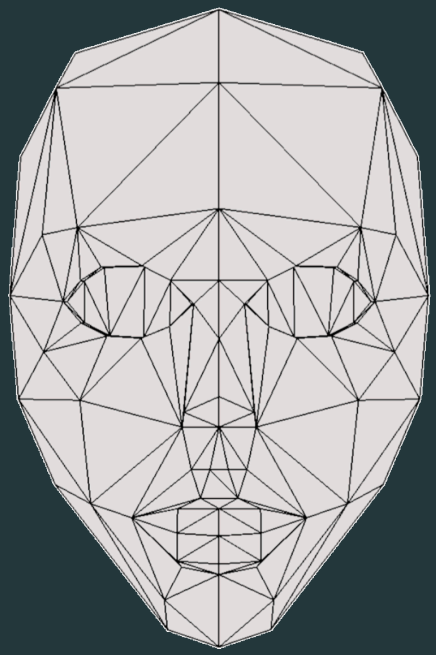
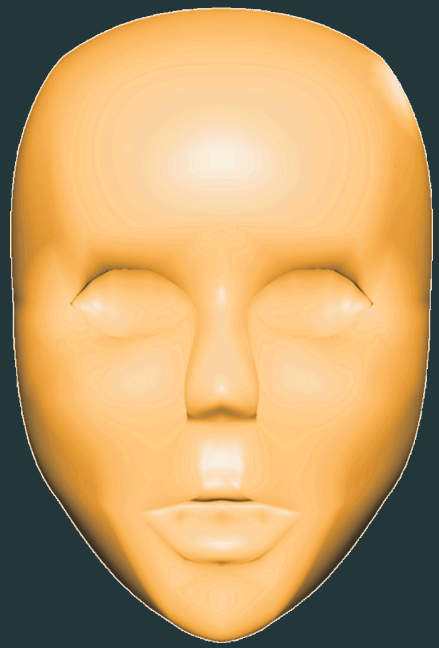
Advanced Computer Graphics



INPUT MESH

GOURAUD

PN GEOMETRY



PN TRIANGLES

SINGLE PN TRIANGLE

GEOMETRY

Bezier and Bernstein recap/why cubic?

GEOMETRY - STEP 1

Flat triangle picture, with uniform distributed control points

$$b_{ijk} = (iP_1 + jP_2 + kP_3)/3$$

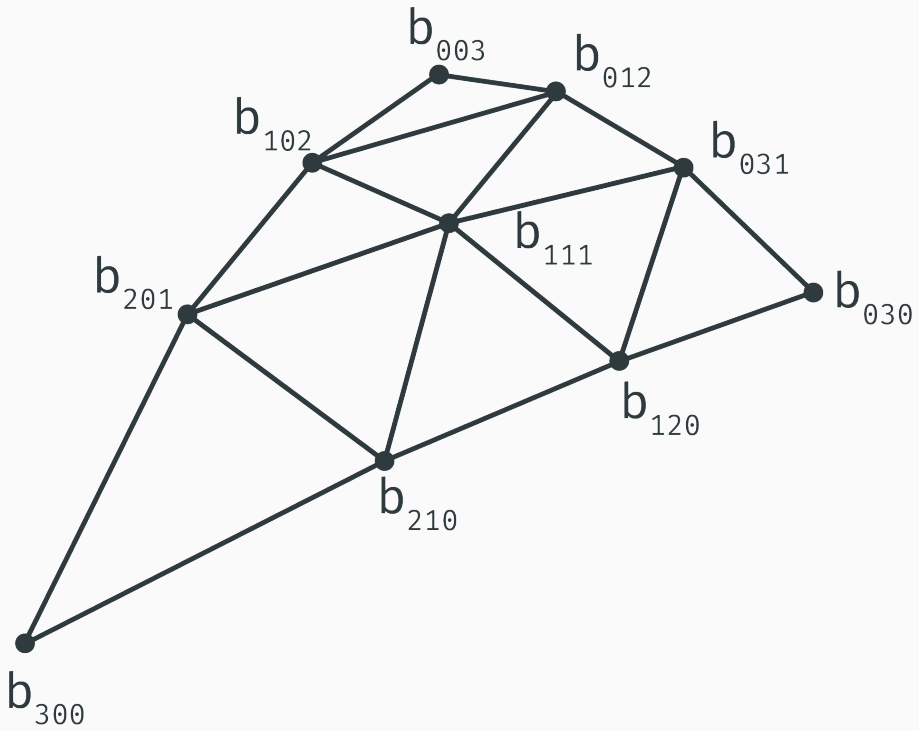
GEOMETRY - STEP 2

Figure 6 of the paper

GEOMETRY - STEP 3

Figure 3 with center down.

GEOMETRY - RESULT



$$A^2 + B^2 = C^2$$

NORMALS

How do you create the PN triangle normals

NORMALS

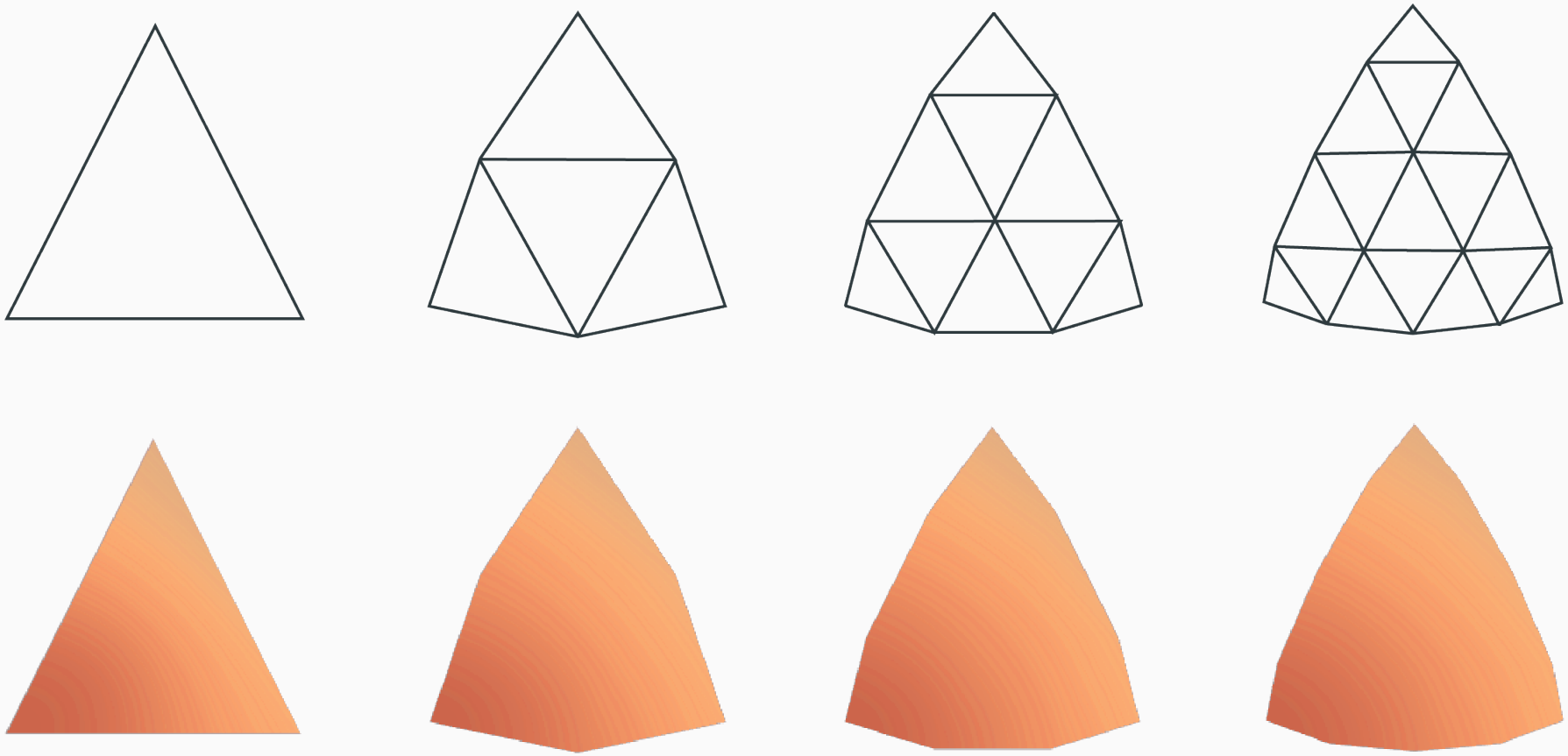
Quadratic why no linear / cubic

LEVEL OF DETAIL

Barycentric coordinates recap

LEVEL OF DETAIL

LOD verhaal



CONSTRUCTION

The steps. Recap of everything construct geometry and normals and evaluate less (low lod) or more points (high lod)

A TRIANGLE MESH

PROPERTIES

Shared normals + [Thales of Milet, 500 BC]?

CONTINUITY

Continuity recap?

SHARED NORMALS

Continuity

SHARP EDGES

Sharp edges

GRAPHICS PIPELINE

HARDWARE - PIPELINE

Waarom waren PN triangles hip in 2001? Plus pipeline

HARDWARE - PIPELINES

Hoe zou je het nu kunnen implementeren? Plus pipeline

CONCLUSION

FIN.

Questions?

REFERENCES

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References