



Automatic Crest Lines Extraction for 3D Morphometry of Fossil Structures

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Thanks to S. Potze, Transvaal Museum



(1)



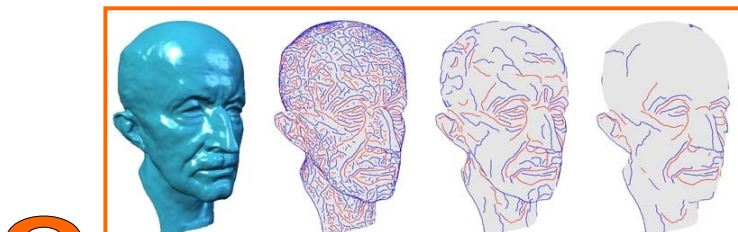
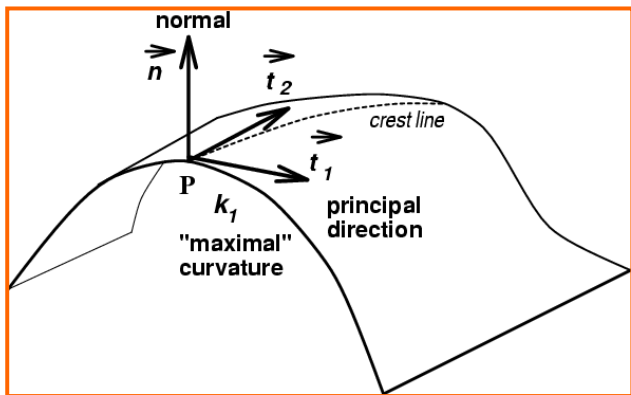
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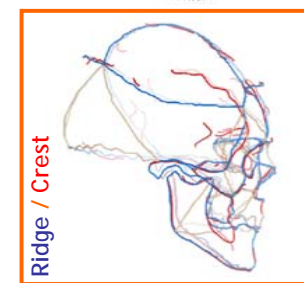
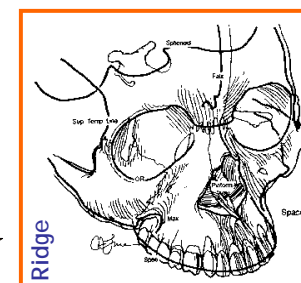
(4)



(3)

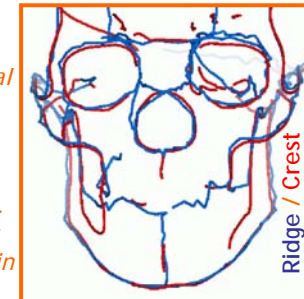


www.riken.jp/briect/Yoshizawa/Research/Crest.html



www.cgai.org

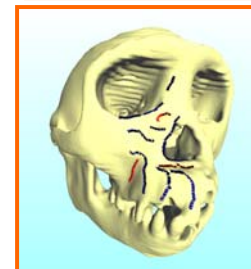
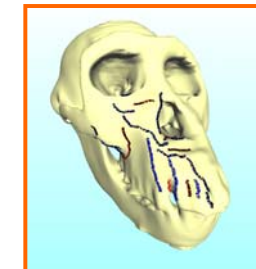
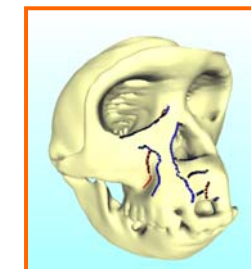
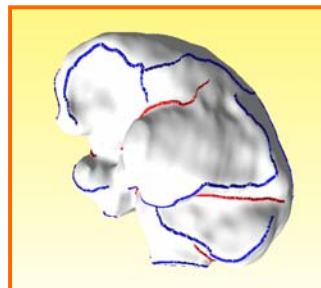
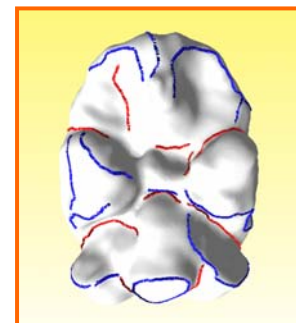
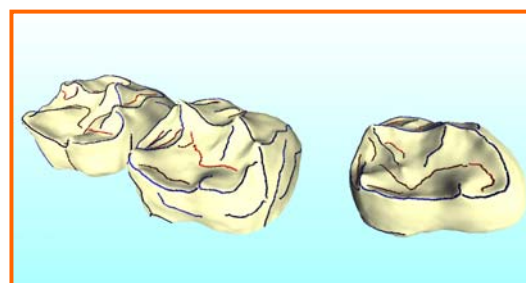
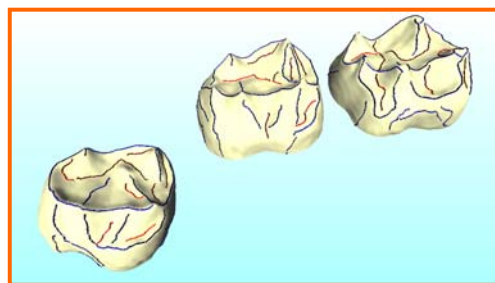
[D. Dean, F.L. Bookstein et al. "Average African American 3D CT Skull Images: The Potential Clinical Importance of Ethnicity and Sex". The Journal of Craniofacial Surgery, 1998.]



[J.P. Thirion, G. Subsol & D. Dean. "Validation of Three Inter-Patient Matching Methods". Visualization in Biomedical Computing, 1996]

Crest lines \Leftrightarrow salient lines of a surface

- $k_1(P)$ maximal principal curvature at point P
- $\vec{t}_1(P)$: associated principal direction
- $\text{grad}_P k_1 \cdot \vec{t}_1(P) = 0 \Leftrightarrow P$ is a crest point



Enamel Dentine Junction: STS52 - Right Mandibule - M3 M2 M1

Endocranium: STS5

Infraorbital surface
Pan paniscus (female) / STS5