

Finding a fETus with UltraSound (FETUS)

Public Engagement Small Grant

Shu Wang, Ou Zhanchong, and Miguel Xochicale

Event name **#2021**

6th July 2021

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Who are we?

Who are we? / Where we come from? / Do we have hobbies?

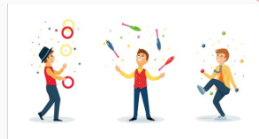
**Shu
Wang**



**Zhanchong
Ou**

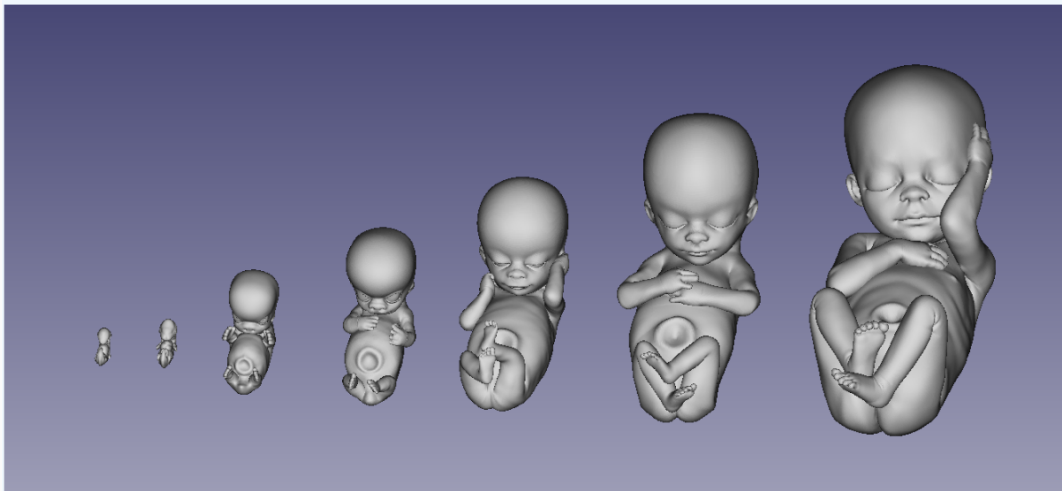


**Miguel
Xochicale**

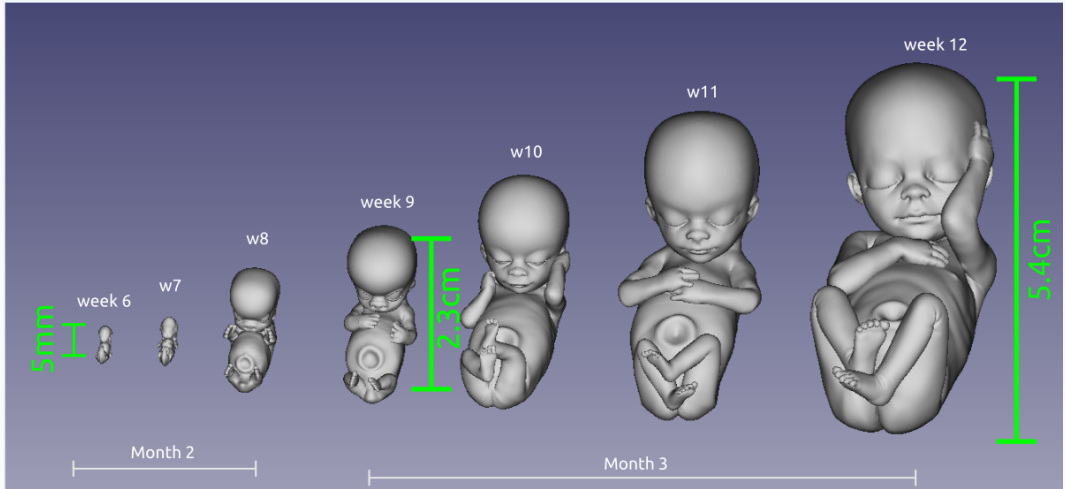


Guessing Fetal Growth

Can you guess the age/size of these fetus?



Fetal Growth



Looking inside the human body

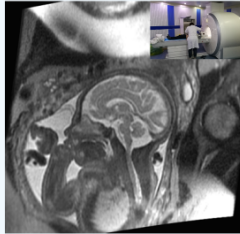
Medical Imaging in Pregnancy

CT



+ high image quality  - non-real-time

MRI



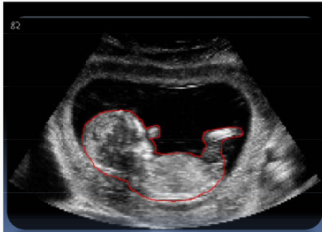
+ high image quality  - non-real-time

US



+real-time  - poor-image quality

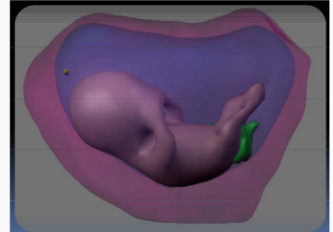
Segmentation on 3D US data



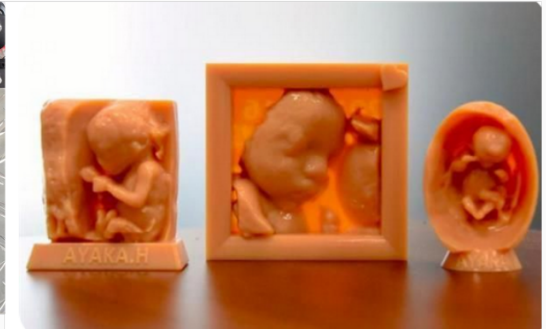
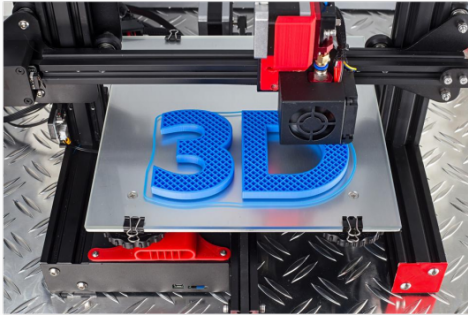
Tissue Labelling



Surface Reconstruction



3D printing FETUS



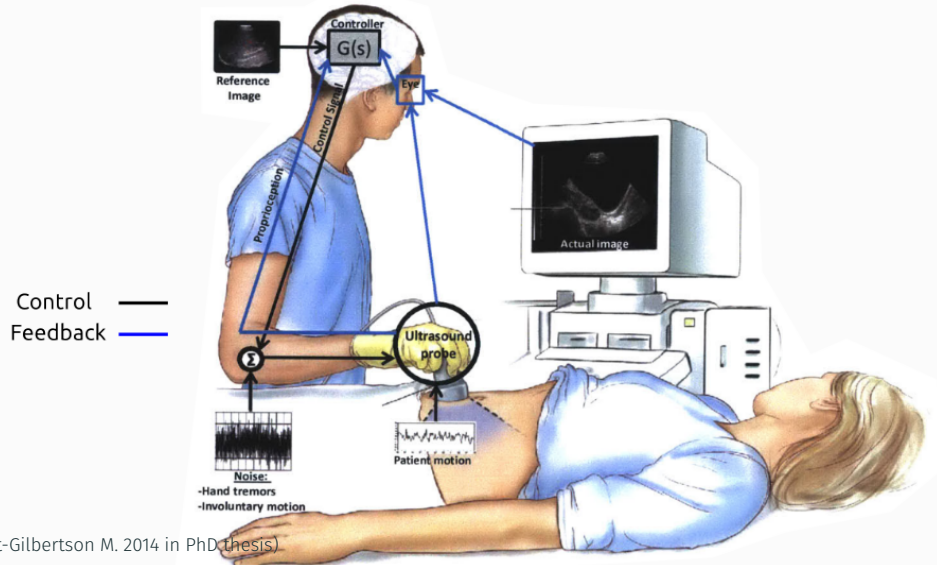
Example 1



- Click on the image to play/pause the video.
- Move pointer to the bottom of the video frame for a draggable position control.

Simulating Ultrasound-Guidance Interventions

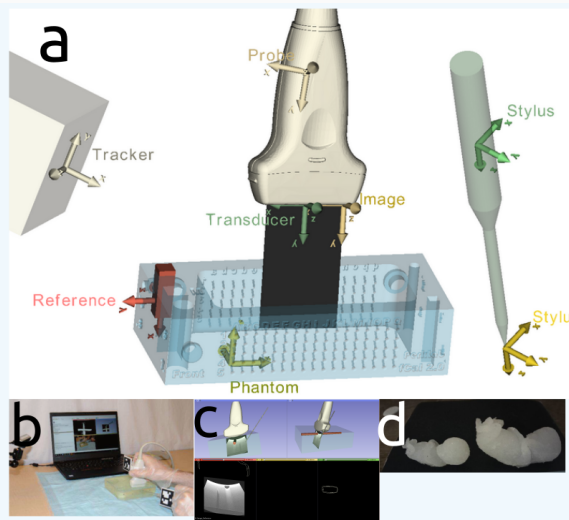
The sonographer-probe-patient control system



Simulator for Ultrasound-Guidance Interventions

Towards a more realistic

- UGI
- US images
- Phantoms with 3D-printed US compatible material
- Training for in-plane, out-of-plane needle tracking



((a) Coordinate systems overview sketch in 3D Slicer, (b) Asselin et al. 2018 in conf-BIVPCS, (c) US-simulator, and (d) 3D-printed fetus)

Takeaway messages / Surprises /
Evaluation

Conclusions

We

-

Future work

- ...

- ...

Acknowledgements



Shu
Wang



Ou
Zhanchong



Fang-Yu Lin



Miguel
Xochicale



Name
Surname

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