

Computer Vision and stuff

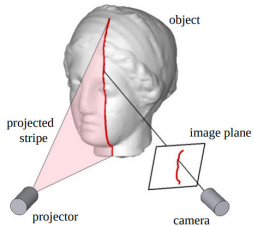
Willie Brink

Applied Mathematics, Stellenbosch University

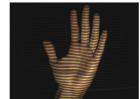
wbrink@sun.ac.za

Previous work

- structured light for 3D surface reconstruction in real-time



(a) initial orientation



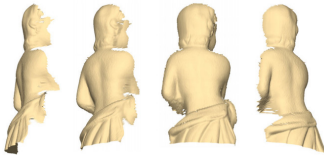
(b) yaw



(c) pitch

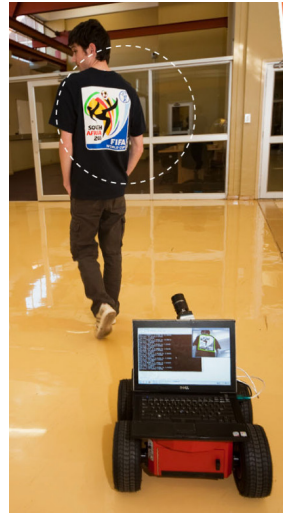
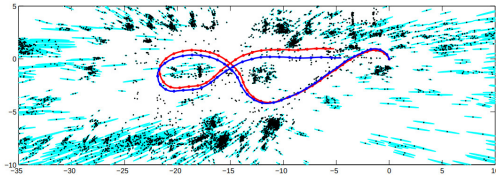


(d) speed



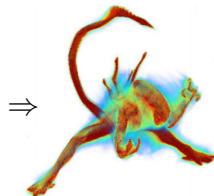
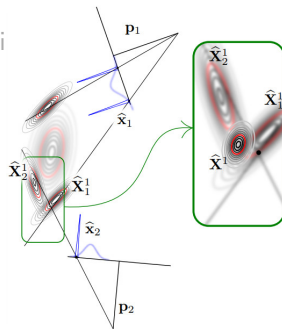
Previous work

- structured light for 3D surface reconstruction in real-time
- computer vision in robotics



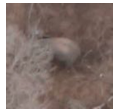
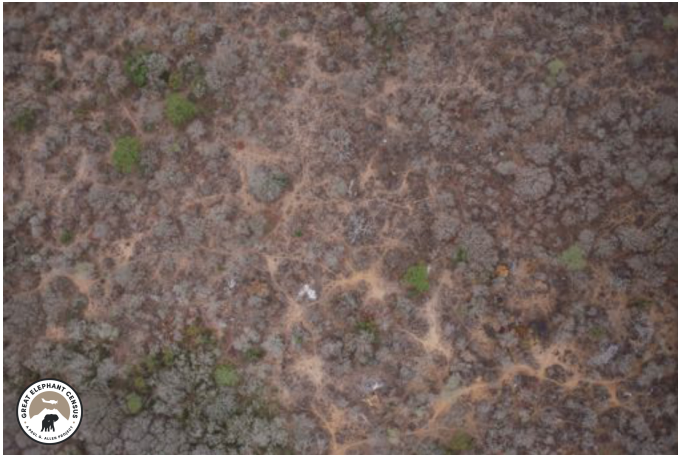
Previous work

- structured light for 3D surface reconstruction i
- computer vision in robotics
- probabilistic models for computer vision



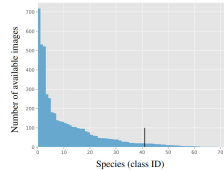
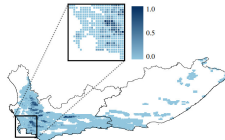
More recent work

- aerial image analysis for the Great Elephant Census



More recent work

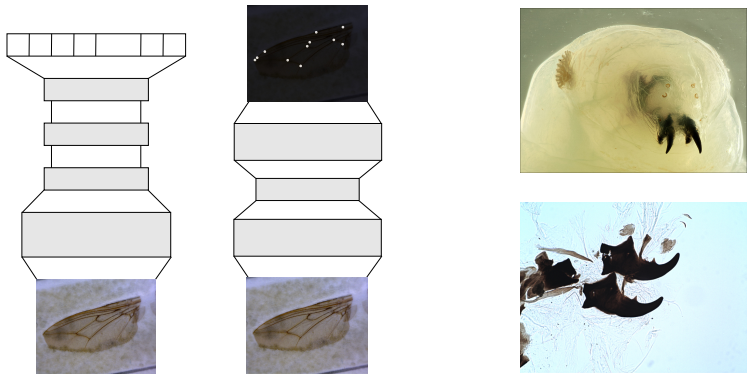
- aerial image analysis for the Great Elephant Census
- image identification of Protea species



<i>Protea burchellii</i>			<i>Protea lorea</i>		
<i>P. neriifolia</i>			<i>P. cynaroides</i>		
<i>Protea lepidocarpodendron</i>			<i>Protea neriifolia</i>		
<i>P. neriifolia</i>			<i>P. lepidocarpodendron</i>		

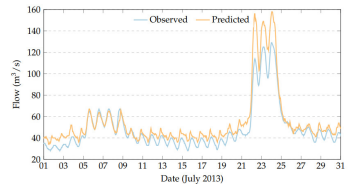
More recent work

- aerial image analysis for the Great Elephant Census
- image identification of Protea species
- image analysis of tsetse wings, and fruit fly maggot mouth hooks



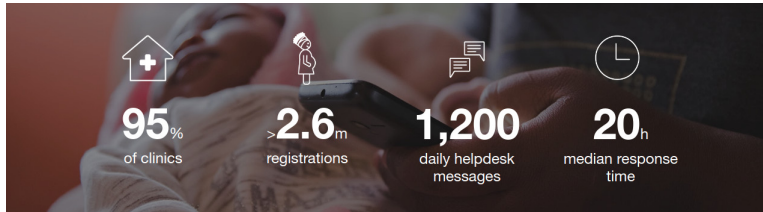
More recent work

- aerial image analysis for the Great Elephant Census
- image identification of Protea species
- image analysis of tsetse wings, and fruit fly maggot mouth hooks
- ML for water management



More recent work

- aerial image analysis for the Great Elephant Census
- image identification of Protea species
- image analysis of tsetse wings, and fruit fly maggot mouth hooks
- ML for water management
- automating healthcare question answering for MomConnect

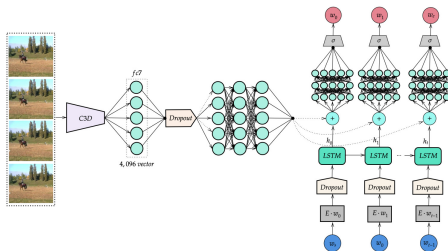


Current interests

- vision + language



– “blue” + “red” \approx



Current interests

- vision + language
- visual representation learning

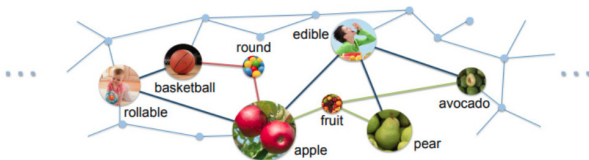
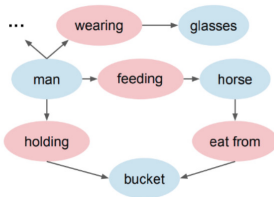


image source: Zhu et al., ECCV 2014



Current interests

- vision + language
- visual representation learning
- CV in low-resource settings, and with long tail distributions

Current interests

- vision + language
- visual representation learning
- CV in low-resource settings, and with long tail distributions
- multitask learning | active learning | self-supervised learning