

Classifynder™

An intelligent assistant for microscopy in palynology, biometeorology, forensic science, taxonomy and more...

Developed by the Massey University Pollen Research Group



THE SYSTEM

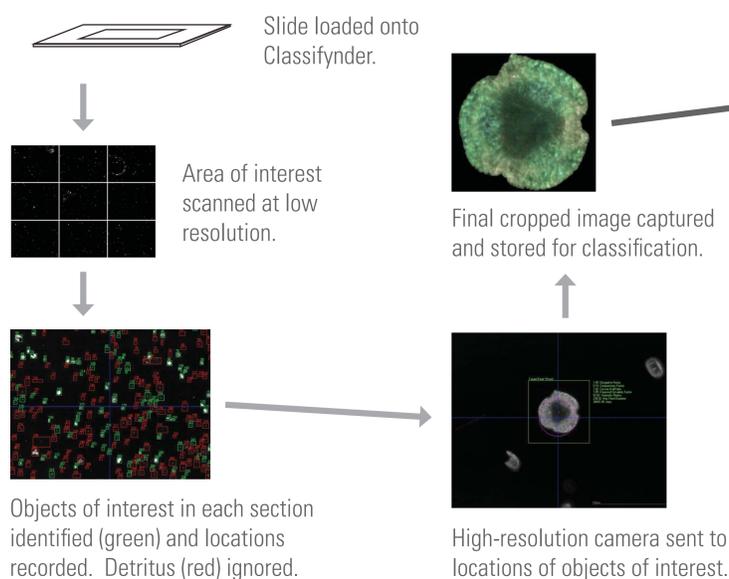
The Classifynder combines robotics, image processing and neural network technology into a system directed at automated counting and classification of objects (e.g. pollen, spores, particulate matter) on standard glass microscope slides.

SPECIFICATIONS

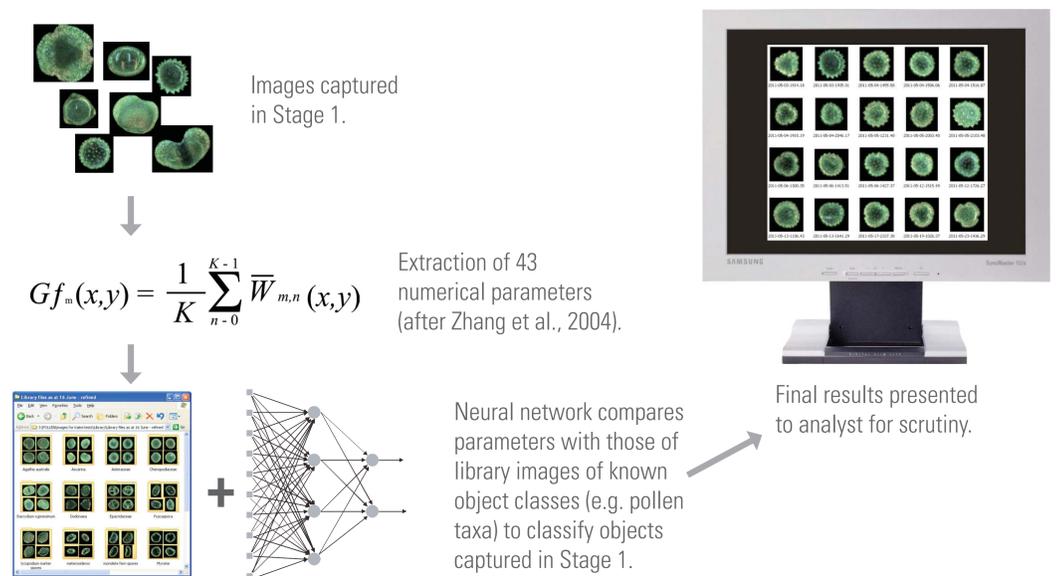
- Digital optical microscope with robotic x, y & z digital stage (0.625µm per step).
- Two objective lenses (effective magnification 200x & 1000x) + two 1.3 megapixel USB cameras (1 pixel = 0.25µm at high resolution).
- Image capture rate of 10 -12 images per minute on intel core i7 processor.

OPERATION

1. Locating objects of interest and capturing images



2. Classifying objects of interest captured in Stage 1



APPLICATIONS

To date the system has primarily been directed towards automatic identification and counting of pollen grains (see Holt et al., 2011), but theoretically it can easily be applied to counting and classifying other microscopic objects such as fungal spores, airborne particulate matter, mineral matter and protozoa.

USER BENEFITS

Obvious benefits of this system are the savings in time spent at the eye piece of a microscope, but the system also offers investigators the potential to attempt larger sampling regimes, demonstrate more repeatable and consistent counting and identification, rapidly estimate the relative abundance of objects on a slide, maintain sets of 'virtual slides', develop and share library images between groups, and the ability to trace captured objects back to their original location on their source slide.

VISIT US AT www.classifynder.com

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References

Holt, K., Allen, G., Hodgson, R., Marsland, S., Flenley, J., (2011). Progress towards an automated trainable pollen location and classifier system for use in the palynology laboratory. *Review of Palynology and Palaeobotany* 167, 175 - 183.
Zhang, Y., Fountain, D.W., Hodgson, R.M., Flenley, J.R., Gunetilleke, S., (2004). Towards Automation of Palynology 3: Pollen Pattern Recognition using Gabor Transforms and Digital Moments. *Journal of Quaternary Science* 19, 763 - 768.



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