

## Forensic Analysis of Forged Scientific Images

**SPEAKER** Prof. Anderson Rocha

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**DATE** 15 Jul, 2026 (Wed)

**TIME** 10:00 AM - 11:00 AM

**VENUE** CS Seminar Room, Y6405, 6th Floor,  
Yellow Zone, Yeung Kin Man Academic  
Building, City University of Hong Kong, 83  
Tat Chee Avenue, Kowloon Tong

### ABSTRACT

The integrity of the scientific record depends on the authenticity of the figures it contains. Image manipulation, systematic fabrication by paper mills, and, more recently, generative artificial intelligence have made forged figures both common and hard to detect: retractions now exceed ten thousand per year, and problematic image duplications appear in an estimated one in twenty-five biomedical papers. This talk presents a forensic perspective on the problem, organized around four fronts. The first is assessing the reliability of the evidence, whether a figure has sufficient quality to be analyzed at all. The second is detecting manipulations such as duplication, copy-move, and splicing/composition, supported by dedicated datasets and benchmarks. The third is tracing provenance to expose the coordinated output of paper mills. The fourth is detecting and attributing images synthesized by generative models through their spectral and statistical signatures. Drawing on recent results from several collaborations, the talk reviews what current methods can and cannot do, and outlines the open challenges ahead.

### BIOGRAPHY

Prof. Rocha is a Full Professor of Artificial Intelligence and Digital Forensics at the Institute of Computing, University of Campinas (Unicamp), Brazil, where he leads the Recod.ai Artificial Intelligence Lab. His work sits at the intersection of AI, multimodal learning and digital trust. He is an elected affiliate member of both the Brazilian Academy of Sciences and the Brazilian Academy of Forensic Sciences, and has played a prominent role in the global research community through the IEEE Information Forensics and Security Technical Committee, where he served multiple terms, including as Chair. Rocha is an IEEE Fellow and has received competitive research fellowships from Microsoft Research and Google Research, in addition to the Tan Chin Tuan Fellowship (Singapore) and the Asia-Pacific Artificial Intelligence Association Fellowship. He is also an IEEE Distinguished Lecturer and an IEEE Biometrics Council Distinguished Lecturer. Recognized for his scientific impact, he is ranked among the top 2% most influential researchers worldwide by studies from Stanford/PlosOne and Research.com.

**All are welcome!**



In case of questions, please contact Prof. WANG Shiqi at [shiqwang@cityu.edu.hk](mailto:shiqwang@cityu.edu.hk), or visit the CS Departmental Seminar Web at <https://www.cs.cityu.edu.hk/events/cs-seminars/recent-cs-colloquiums>.