



LABELS

Large-scale Annotation of Biomedical Data and Expert Label Synthesis

Diana Mateus
Technische Universität
München



Australian Centre for Visual Technologies
Innovation and education in visual information processing.



Delft
University of
Technology



Google DeepMind



Technische Universität München



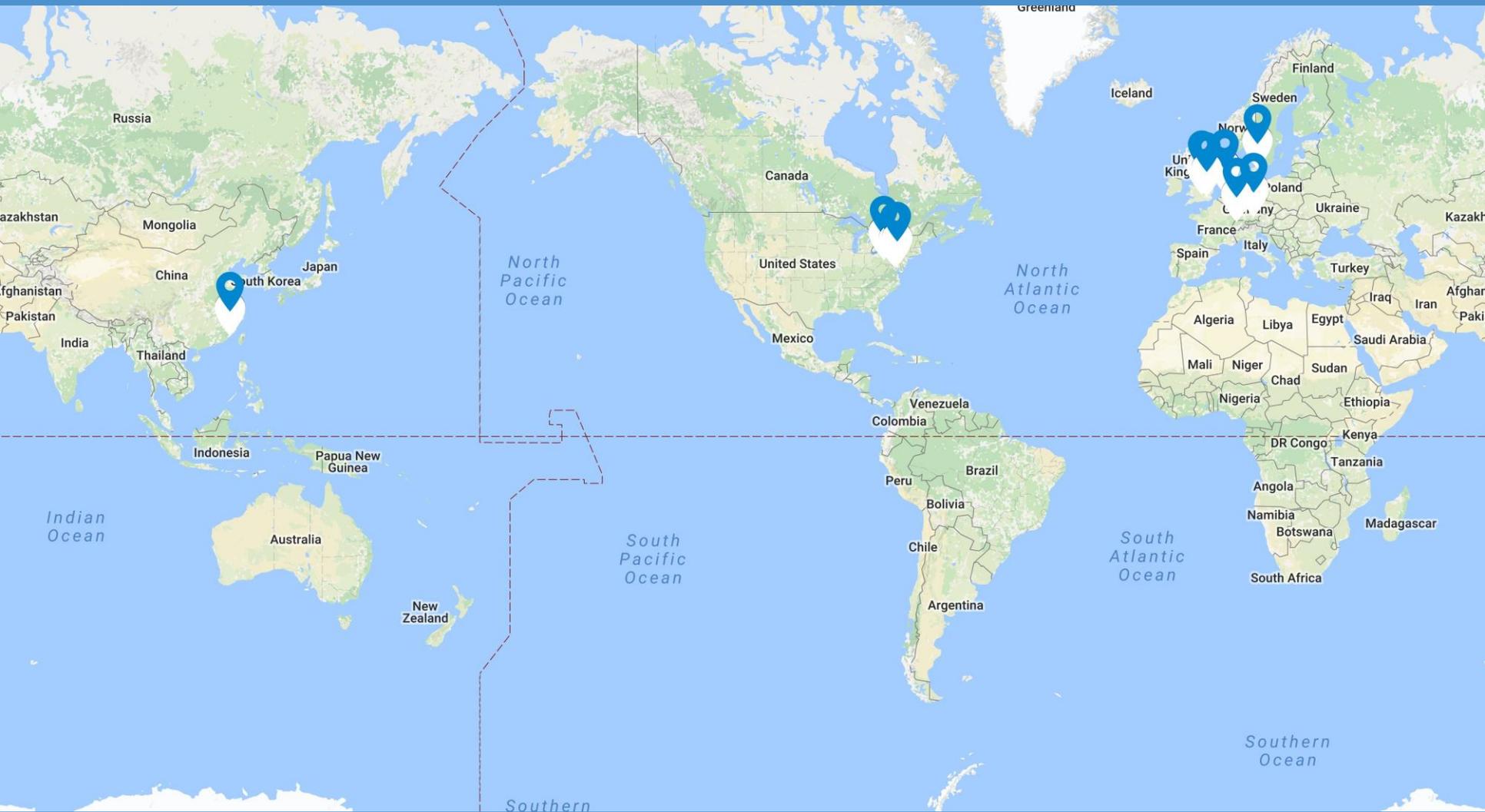
JOHNS HOPKINS
WHITING SCHOOL
of ENGINEERING

Schedule

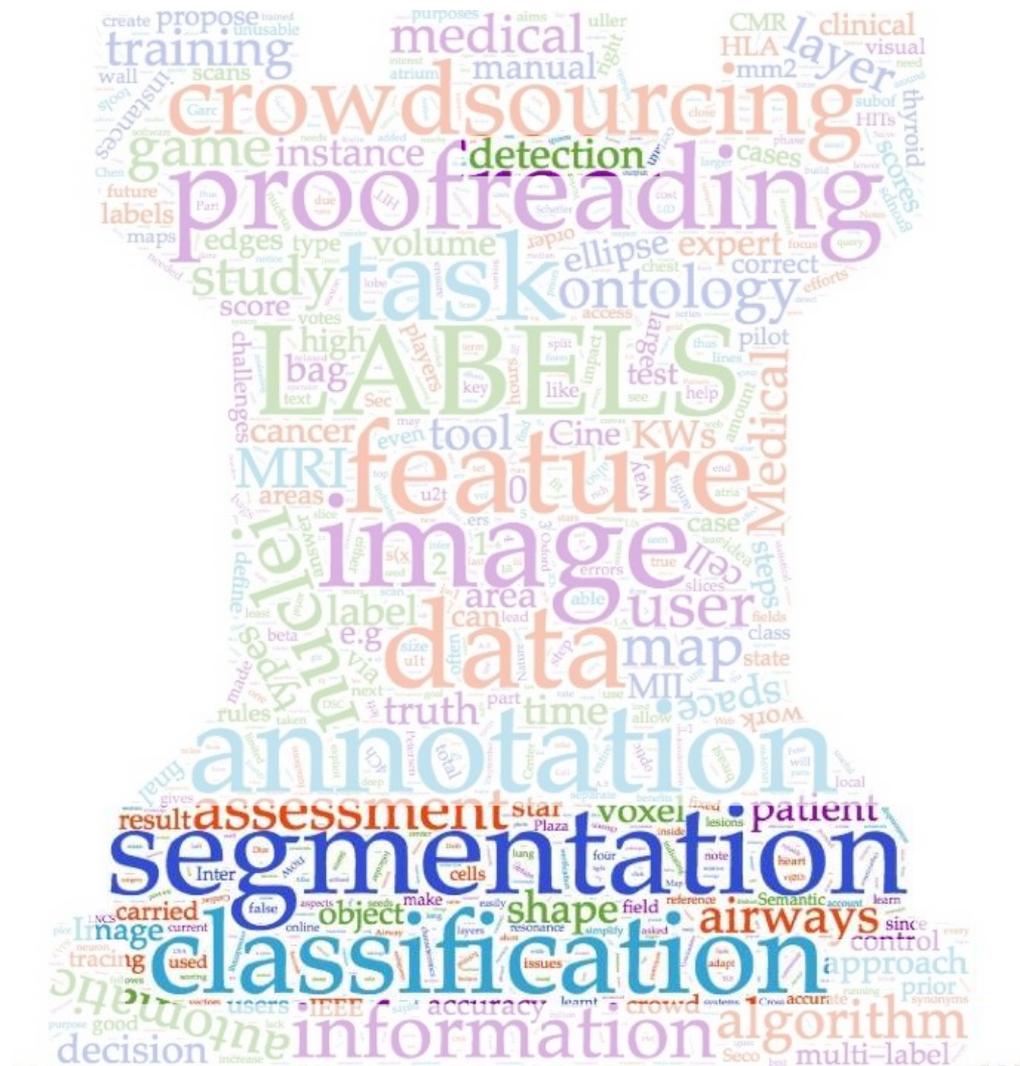
- 14:00-14:10 **Welcome** (Organisers)
- 14:10-15:00 **Introductory Keynote by Marco Loog, TU Delft**
Dealing with Weakly and Partially Annotated Data.
- 15:00-16:00 **Selected oral presentations (12 min + 5 min questions each)**
 - Hierarchical Feature Extraction for Nuclear Morphometry-based Cancer Diagnosis. Chi Liu*, Carnegie Mellon University
 - Playsourcing: A Novel Concept for Knowledge Creation in Biomedical Research. Shadi Albarqouni*, Technische Universität München, Germany
 - Focused Proofreading to Reconstruct Neural Connectomes from EM Images at Scale. Stephen Plaza*, Janelia Research Campus, HHMI
- 16:00-16:30 **Break**
- 16:30-17:15 **Keynote by Prof. Pascal Fua, EPFL**
Domain Adaptation for Microscopy Imaging
- 17:15-18:00 **Poster session and Demos**
(Also including oral papers + possibility to run demos on computers)



Geography of LABELS accepted papers



LABELS in other words....



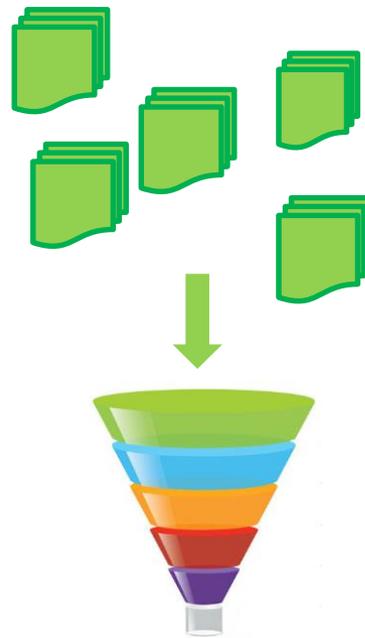
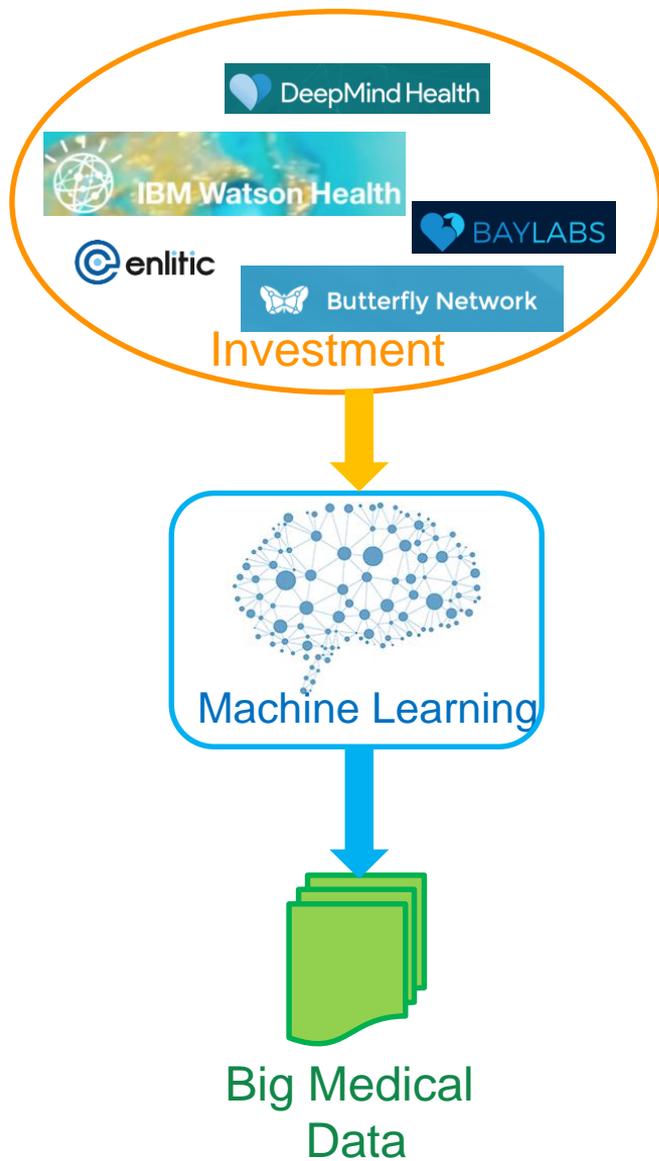
Regression

“Expert labels
vs
Ground-truth”

Uncertainty?

Ambiguity?





Medical Expert
knowledge

vs.



Crowdsourcing

Opportunities:

- More **formal study** of the annotation problem
- **Active** interaction with experts
- **Unsupervised** data and few annotations
- Close the crowdsourcing + learning **loop**



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Dealing with Weakly and Partially Annotated Data

[Prof. Marco Loog](#)

Pattern Recognition Laboratory

TU Delft, The Netherlands

University of Copenhagen

Short bio

M.Sc. degree in **mathematics** from **Utrecht University** and a

Ph.D. degree from the **Image Sciences Institute**.

Copenhagen **associate professor**, next to which he worked at **Nordic Bioscience**.

Pattern Recognition Laboratory at Delft University of Technology.

He is also an honorary professor in pattern recognition at the University of Copenhagen.



Keynote: Domain Adaptation for Microscopy Imaging

Prof. Pascal Fua

Computer Vision Laboratory

EPFL Switzerland

Short bio

Pascal Fua received an engineering degree from **Ecole Polytechnique, Paris, in 1984** and the Ph.D. degree in Computer Science from the **University of Orsay in 1989**.

He joined **EPFL (Swiss Federal Institute of Technology) in 1996** where he is now a Professor in the School of Computer and Communication Science.

Before that, he worked at **SRI International and at INRIA Sophia-Antipolis** as a Computer Scientist. His research interests include shape modeling and motion recovery from images, analysis of microscopy images, and Augmented Reality. He has (co)authored over 300 publications in refereed journals and conferences. He is an IEEE Fellow and has been an Associate Editor of IEEE journal Transactions for Pattern Analysis and Machine Intelligence. He often serves as program committee member, area chair, and program chair of major vision conferences and has cofounded two spinoff companies.



