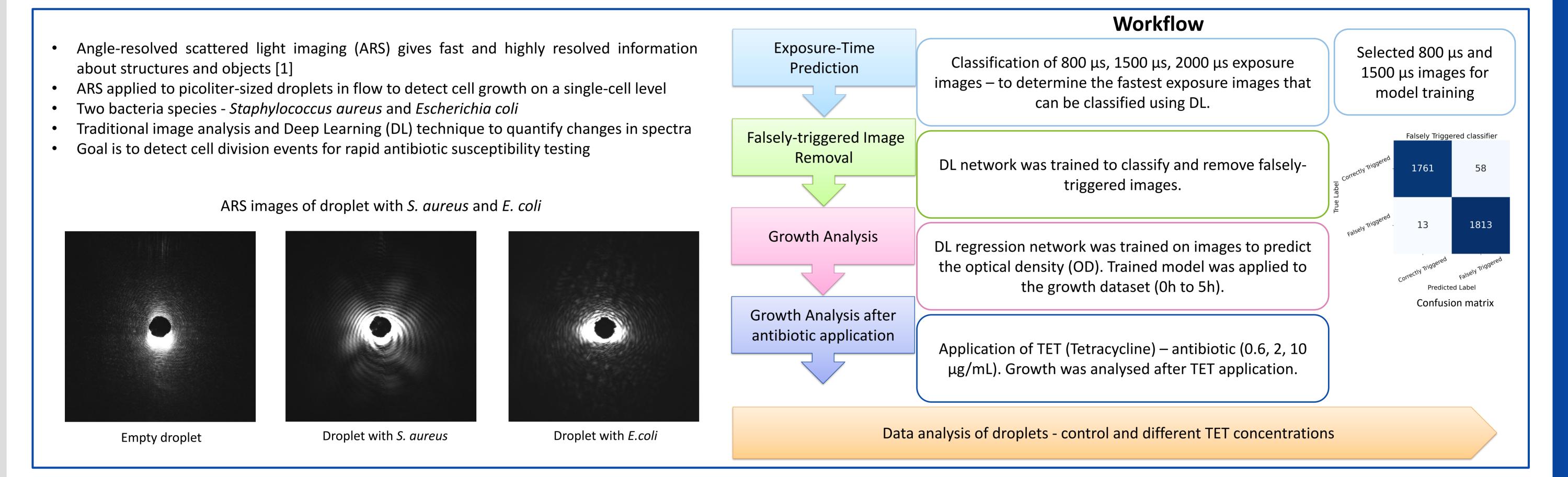
Deep learning supported image analysis of angle-resolved scattered light images of bacteria in microfluidic droplets

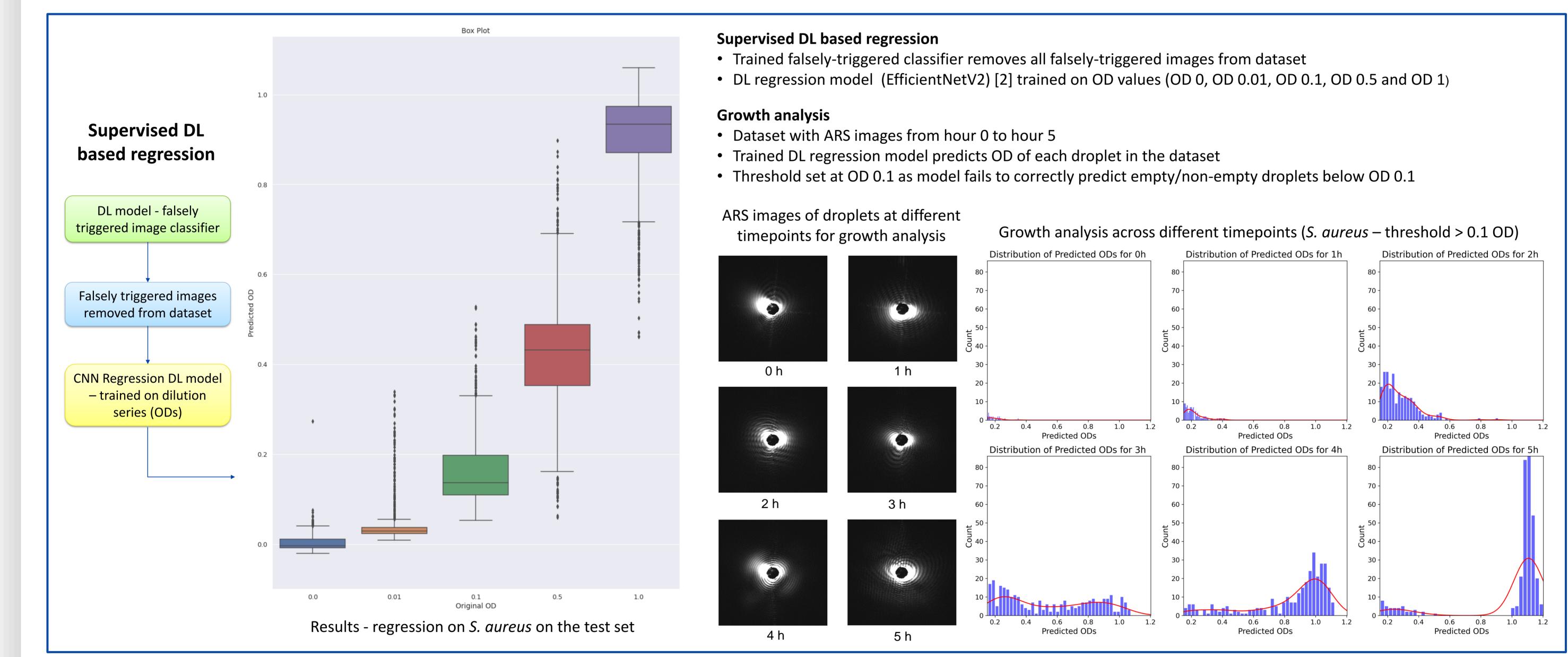
Arjun Sarkar^{1,2}, Carl-Magnus Svensson¹, Martina Graf^{2,3}, Anne-Sophie Munser⁴, Miriam A. Rosenbaum^{2,3}, Marc Thilo Figge^{1,2}

¹ Applied Systems Biology, Leibniz Institute for Natural Product Research and Infection Biology – Hans Knöll Institute, Jena, Germany
 ² Friedrich Schiller University, Jena, Germany
 ³ Bio Pilot Plant, Leibniz Institute for Natural Product Research and Infection Biology – Hans Knöll Institute, Jena, Germany
 ⁴ Fraunhofer Institute for Applied Optics and Precision Engineering IOF, Jena, Germany

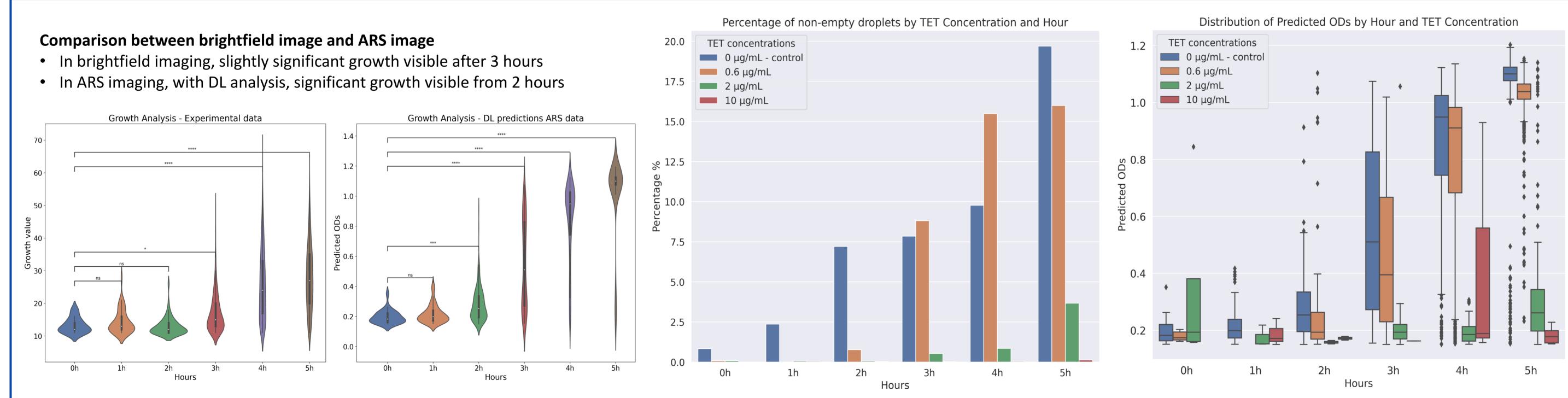
Microfluidic droplets and angle-resolved scatter (ARS) images



Training DL regression model and Growth analysis



Growth analysis after antibiotic (TET) application



TET application and growth analysis

- Dataset with 3 TET concentrations 0.6, 2, and, 10 μg/mL
- Trained DL regression model predicts growth (OD)

• No significant growth reduction after application of TET concentration - 0.6 μg/mL (7% of the total droplets show growth)

- Significant reduction in growth from TET concentration of 2 μ g/ML 0.5% of the total droplets show growth
- At TET concentration 10 μ g/ML only 0.04% of the total droplets show growth

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References

arjun.sarkar@leibniz-hki.de

[1] Schröder S *et al.* 2011. *Applied Optics*. 50(9):C164-C171
[2] Tan, M., & Le, Q. 2021. *ArXiv, abs/2104.00298*

Work is funded by BMBF through InfectoGnostics 2 (ADA Nr. 13GW0456B)





Bundesministerium für Bildung und Forschung