PRINCE RAVI LEOW

MSc. Bioinformatics & Systems Biology · PhD Student

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RESEARCH FOCUS

I build computer vision systems that measure animal behaviour and health at scale. Trained formally in bioinformatics, I bring a quantitative genomics toolkit to video-based problems, combining self-supervised video models, multi-object tracking, and large-scale experimental trials to extract objective behavioural indicators from livestock footage. These methods have immediate applications in disease surveillance, welfare monitoring, and early outbreak detection across commercial poultry operations.

TECHNICAL SKILLS

- **Data Science & Machine Learning:** `pandas, matplotlib/seaborn, tidyverse, PyTorch, scikit-learn, XGBoost`
- **Modern Computer Vision:** multi-object tracking & segmentation (e.g. `YOLO, SAM`), pose estimation (`DeepLabCut`), self-supervised image/video models (e.g. `DINO, V-JEPA`)
- **Reproducible science:** `git, DVC, Snakemake/NextFlow, conda/pixi/uv`
- **Programming:** Python, R, Bash, C, MATLAB
- **Agentic coding:** Claude Code, Codex, GitHub Copilot

RESEARCH EXPERIENCE

Visiting Scientist | Centre for Genomic Epidemiology, Technical University of Denmark

Oct 2026 – Mar 2027

- Developing image analysis and computer vision pipelines for Global Pathogen Analysis Platform (GPAP).

PhD Student | Section for Health Data Science & AI, University of Copenhagen

Feb 2025 – Present

- Developed **PlayClass**, a computer vision pipeline for automated play-behaviour classification in poultry (joint first-author, CV4Animals @ CVPR 2026).
- Part of sysadmin team for lab's ∼10-user Linux-based HPC.

Research Assistant | Section of Epidemiology, University of Copenhagen

Mar 2024 – Jan 2025

- Developed and implemented an automated multi-camera capture system generating ∼10 TB of video, extracted trajectories and motion metrics (tracking, optical flow) to define a behavioural sickness indicator.
- Ran multi-pathogen poultry infection trials end-to-end across ∼170 birds from experimental design through to necropsy, in collaboration with UCPH Department of Veterinary and Animal Sciences.

Research Intern | Globe Institute, University of Copenhagen

Sep 2023 – Feb 2024

- Built bioinformatics pipeline to predict bacteriophage-derived anti-microbial proteins (endolysins), spanning database construction, feature engineering, structural analysis and a gradient-boosting classifier (unreleased).

EDUCATION

MSc. Bioinformatics & Systems Biology | Technical University of Denmark

Feb 2022 – Jun 2023

Includes credits transferred from prior graduate study in Biochemistry (molecular genetics specialisation), University of Copenhagen, 2018 – 2021.

BSc. Chemistry & Molecular Biology | Roskilde University

Sep 2015 – Jun 2018

PUBLICATIONS

1. Scheidwasser, N., Poulsen, L.L., **Leow, P.R.**, Khurana, M.P., Iglesias-Carrasco, M., Laydon, D.J., Donnelly, C.A., Bojesen, A.M., Bhatt, S., & Duchêne, D.A. (2025). Deep learning from videography as a tool for measuring *E. coli* infection in poultry. *Royal Society Open Science*, *12*(10), 250151. https://doi.org/10.1098/rsos.250151
2. **Prince Ravi Leow**, Neil Scheidwasser, Rebecca Oscarsson, Per Jensen, Samir Bhatt, David Alejandro Duchêne (2026). PlayClass: Automated Play Behaviour Classification in Poultry. *Accepted for CV4Animals Workshop @ CVPR 2026* https://doi.org/10.48550/arXiv.2605.27304

AWARDS & RECOGNITION

Best Lightning Talk - Health Data Science Day 2025
Topic: Infectious Outbreak Detection in Livestock Via Computer Vision

Featured in GitHub Octoverse 2026
PlayClass named in GitHub's annual report as an example of domain experts building with AI coding agents

ACADEMIC ENGAGEMENT

Talks & Presentations

- Machine Learning & Global Health Network Seminar, April 2025, Copenhagen
  Lightning Talk — *Topic: 'Let's Talk About Big Farmer'*
- Health Data Science Day 2025, Copenhagen
  Lightning Talk & Poster presentation — *Topic: Infectious Outbreak Detection in Livestock Via Computer Vision*
- Poster presentation at the CV4Animals Workshop @ CVPR 2026, Denver – *Topic: PlayClass: Automated Play Behaviour Classification in Poultry*

Teaching

- Teaching assistant: Epidemiology Module 2 (BSc. Public Health course, UCPH)
- Lecturer: Medicine and Data Literacy for two basic statistics modules (MSc. Medicine course, UCPH)
- Teaching assistant: Phylo2Vec Workshop at Imperial College London, September 2025

Outreach

- A Byte Of Health: Author of bi-weekly newsletter on health and life science breakthroughs