Study project SS2020: Do you have some identification on you? - Image-based salamander recognition.

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WHAT IS THIS ABOUT

- Fire salamander
- Size when grown up: > 20cm
- Maximum age: 30 years

- Living also in the surroundings of Bochum

- Endangered by Batrachochytrium salamandrivorans (Fungus from Asia)

- Hard to gain insight into population sizes and migration routes
WHAT WE WANT TO DO

- Unique marking on animal’s body
- Can be matched with older photos, but this is tedious manual work
- Is it possible to automate this? (That’s your task)
- Computer vision algorithm (possible Deep Learning) to suggest matching photos
- Optional: Mobile app storing photo with time and location and direct possibility to match
**WHAT WE WANT TO DO**

- We have data
  - 1,200+ photos
  - Unannotated so far
  - *(Mandatory)* Some maintenance to do here

- We have a little code
  - *(Mandatory)* Much more to do here (model, training)

- We have no app
  - *(Optional)* This would be where you could shine
WHAT WE NEED YOU TO KNOW

- **Minimum**
  - Programming in a high-level language
  - Some mathematics: Linear Algebra, Multi-dimensional Calculus, Statistics

- **Preferred:**
  - Python with numpy, tensorflow / keras or pytorch, opencv
  - Good grades in Digitale Bildverarbeitung / Computersehen: Einführung or Computer Vision: Deep Learning / Deep Learning for Computer Vision
  - The mobile app guy / girl

- **You can also apply as a team!**
WHAT ELSE

- 2 – 4 Bachelor or Master students of Applied Computer Science
- Preparatory meeting on Wednesday, March 25th, 10 am
- Catchup meetings every 2 to 3 weeks
- Submission of report on July 24th to the examination office

- Apply to: sebastian.houben@ini.rub.de
  - State your name, immatriculation number, semester
  - Skills
  - Relevants lectures visited
- Supervisor: sebastian.houben@ini.rub.de