Data Management Support: Case study RITMO

Kayla Burnim

University of Oslo

Norwegian Centre of Excellence

RITMO Centre for Interdisciplinary Studies in Rhythm, Time and Motion

Research Center of Excellence opened in fall 2018

- Psychology (Faculty of Social Sciences)
- Informatics (Faculty of Mathematics and Natural Sciences)
- Musicology (Faculty of Humanities)

RITMO at a glance

Rhythm is everywhere, from how we walk, talk, dance and play, to how we tell stories about the past and predict the future.
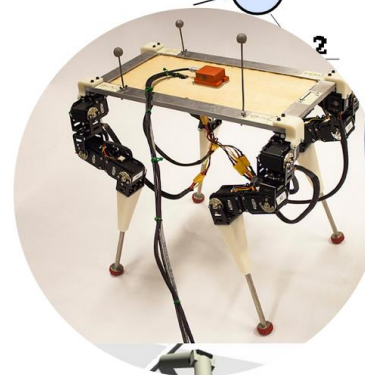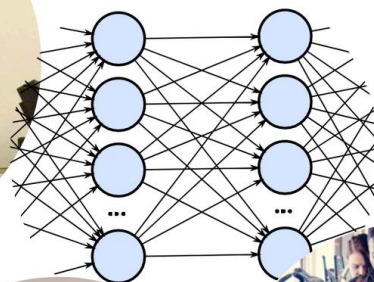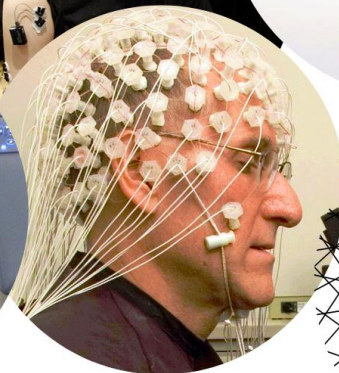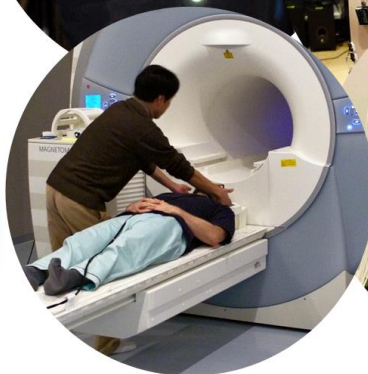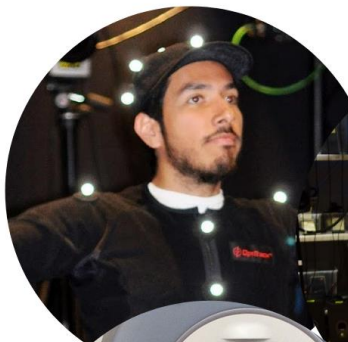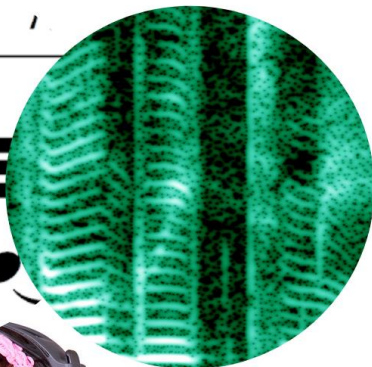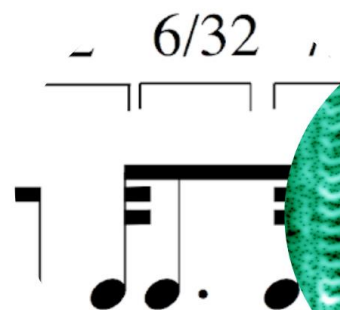
What are the basic structures and features of rhythmic phenomena

The LINK!

What are the mechanisms underlying human perception and cognition of rhythm?

RITMO Methods

Lab Structure at RITMO

RITMO's labs are run by two lab engineers, who also act as data managers.

FRONT Neurolab

fourMs Lab

Interaction (Robotics)

About me

Senior Engineer at RITMO

Before RITMO...
- Medical device design
    - R&D Engineer, new product development
    - Regulatory documentation
- Children's Hospital
    - Gait Lab Engineer, Orthopedic care
    - Clinical and research documentation

At RITMO
- Lab Engineer
    - Research and education related to lab
- Data Manager
    - Create data management system
    - Actively support research data management
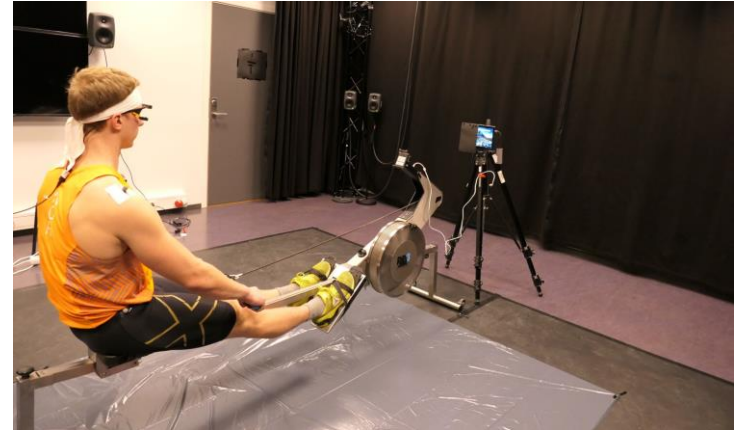
Researchers at RITMO

Challenge of variety

Bio
- IMV, PSI, IFI (1+)
- Career stage (RA to Prof)
- Permanent, temporary, visiting

Technical
- Experience with research
- Exposure to data management
- Computer literacy

Data Management at RITMO

New topic to many researchers

Importance to the center
- Allocated personnel
- Interdisciplinary
- Specialized and custom technology
- Goals of open science with FAIR data

Uniqueness of individual projects emphasizes a specific need for good data management

Projects at RITMO

Challenge: Consistently inconsistent

Unique projects at RITMO vary in...
- Personnel
- Collaboration
- Location
- Timeline
- Technology use
- Methodology
- Privacy (Green -> Red)
- Copyright
- Code development
- Dissemination goals

Next up examples from first week of November
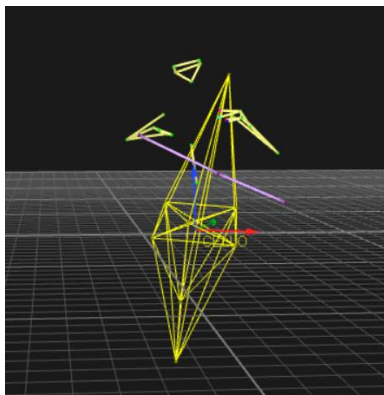
Example Project : Drop the beat!

Data capture

Study about how people synchronize when they are drumming a beat together. The study involves drumming together with another person while motion capture, eye tracking, and EMG (electromyography) data are collected

Yellow data
No copyright
Collaboration
Low level involvement

Example Project: Articulations

Legacy data clean-up

Series of sessions of a single person playing an instrument under motion capture with video and audio.
Professor is retiring, wants to FAIRify data

Data
- Mostly 2012 - 2016 (Before GDPR)
- No documentation or notes
- Single person has knowledge
- Previous RAs worked on it
- Unknown copyright
- Yellow?
- High level involvement

Example Project: Deep Dance

Plan for Publishing Data

Improvised dance under motion capture, with video and audio. Researcher using data to understand if machines can learn to improvise dance

Data
- Yellow data
- Copyright sorted
- PhD project with summer interns
- Low level involvement
- Where to publish and at what state?

Example Project: MusicLab Copenhagen

Data transfer and documentation

Massive multinational collaboration project surrounding science concert. Focus of MusicLab series is data generation for Open Science.

- 15+ researchers
- Live stream concert
- Yellow data
- Copyright on some of the music
- Audience participation local and streaming
- Many data streams

Transferring data to secure server and organizing group work for DMP completion

Data Management Development

Local help for RITMO researchers

Email with link to Websites

Getting started with data management at RITMO
1) Local System
    a) Storage and Organization
    b) Documentation and Templates
    c) Clean up past data
2) Education
    a) Knowledge and skills

RITMO Data Management System

System Design
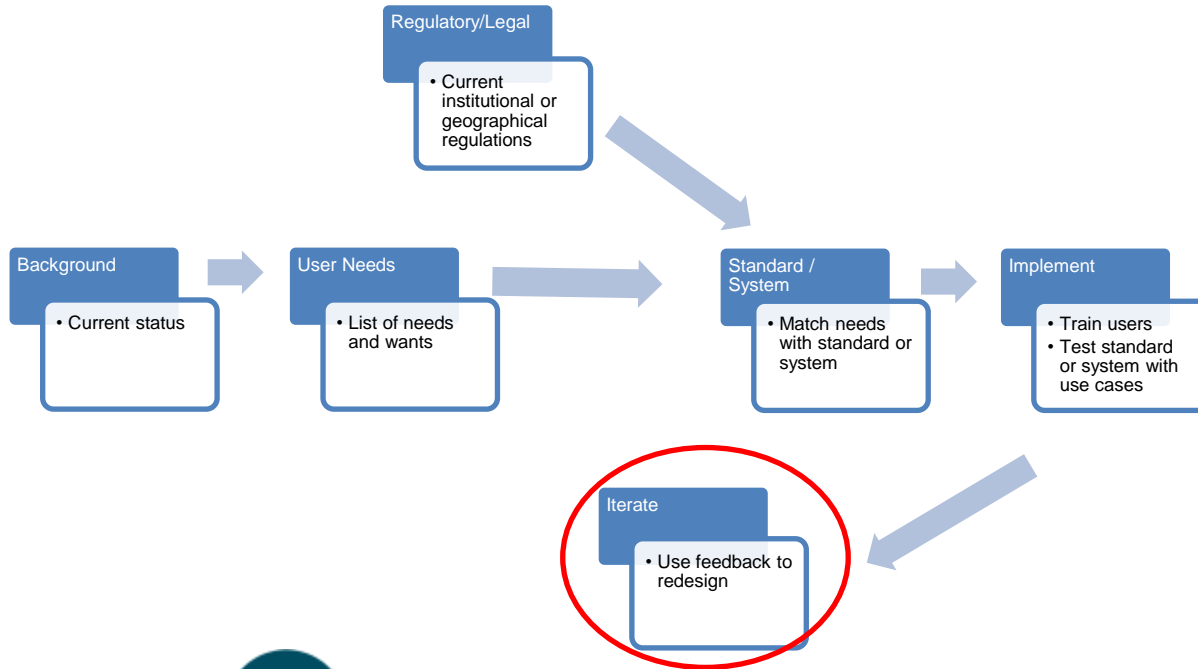
Active assessment
- How are people using the system?
- Gathering feedback

Prepare for new University systems
- FAIR@UiO
- Tags and keywords

Flowchart content:

Regulatory/Legal
- Current institutional or geographical regulations

Background
- Current status

User Needs
- List of needs and wants

Standard / System
- Match needs with standard or system

Implement
- Train users
- Test standard or system with use cases

Iterate
- Use feedback to redesign

RITMO Data Management System

Handbook

RITMO Centre for Interdisciplinary Studies in Rhythm, Time and Motion

Menu   ← Research ← Groups ← fourMs Lab ← Handbook

Data Management

Data Management
- Archiving
- Copyright
- Data Management Plan
- Ethics
- File Naming
- Metadata
- Privacy

It is the responsibility of the researcher to properly manage data. This page is designed as a resource for information, resources, templates, and procedures pertaining to data management specific to RITMO.

Table of Contents
- Why manage data?
- Open Data
- FAIR Principles
- Getting Started with Data Management
- Additional Resources
- Contact Information

Getting Started with Data Management

Starting the process of data management can be daunting. It is recommended to begin early in project development. Important components are:

1. Create a Data Management Plan (DMP)
2. Handle the ethical/legal aspects
   - Ethics
   - Privacy
   - Copyright
3. Organize your files:
   - File naming
   - Folder Structure (Restricted to employees only)
   - Metadata
4. Store the data
   - UiO's Color Classification Guide
5. Archive the data

Single location for information, links, templates, instructions, etc.

https://www.uio.no/ritmo/english/research/labs/fourms/handbook/data-management

RITMO Data Management System

Variable researchers & projects -> Adaptable DM

How you can help me
*   Am I up to date on regulations?
*   What tools should I demo?
*   How can I make my system better?

RITMO Data Management Education

A very inefficient hands-on approach

Motion Capture
The art of studying complex human activity
Future Learn
UNIVERSITY OF OSLO

What I have done...
1. Activities
   a) Ran seminars
   b) Added DM to lab meetings
   c) Held office hours
   d) Added DM to new MOOC
2. Relay Information from Others
   a) University seminars
   b) Library resources
   c) Relevant workshops outside UiO

Data Management Education

Results mixed bag

Reality
- Panic Mode
  - Kayla I need to make a DMP by Friday for funding help!
  - Schedules for my subjects changed and I know I owe you documents but they are coming tomorrow so I will do it after
- Lack of Priority
  - Yeah, it is on my list, I will have it done next week…
- Actively use help
  - Can you sit with me while I do it in case I have questions?
  - I know you told me before, but I want to capture some data next week, what documents do I need?
  - My DMP is finished, can you let me know what you think?
- Trouble following directions
  - File names look fine… No you need to change them, you cannot have last names and special characters
  - "I used mocap" isn't a description of what you did

Data Management Education

Major challenge with my time

Our training is very hands on and not always effective

How you can help:
Frequent Training
Databases and Examples
Office hours
Help with "special cases"
- Short term employees (>1 yr)
- Researchers I am struggling with

Also training/certification for data managers like myself!

Thank you!

Questions?

Contact: Kayla Burnim kaylab@uio.no