

Kickstart Meeting

OpenSource Research

The Sound of AI

November 14th 2020

Meeting guidelines

- Meeting will be recorded
- Please keep mic muted
- Write questions / comments in the chat
- Q&A sessions after each section of the presentation

Overview

1. Organisation structure
2. Project management tools and workflows
3. Goals for step 1
4. Next community meeting
5. Presentations (if time allows!)

1- Organisation structure

What are the main project goals?

- Carry out crowdsourced / open-source research in AI Music Creativity
- Submit paper at the [2021 Conference on AI Music Creativity](#) (1st April submission deadline)

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- Carry out crowdsourced / open-source research in AI Music Creativity
- Submit paper at the 2021 Conference on AI Music Creativity (1st April submission deadline)
- 4-5 month project timeline

181
researchers

**We need an
organisational
structure and
effective workflows
to succeed**

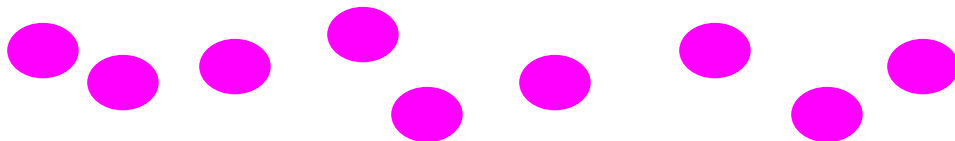
Hierarchical structure

Valerio



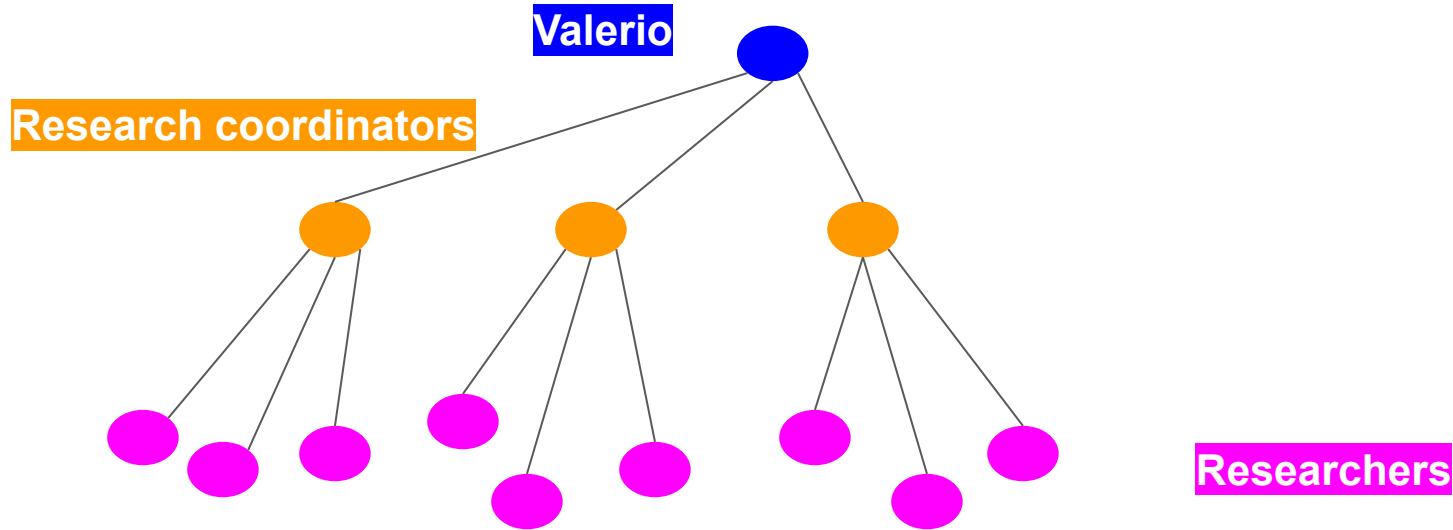
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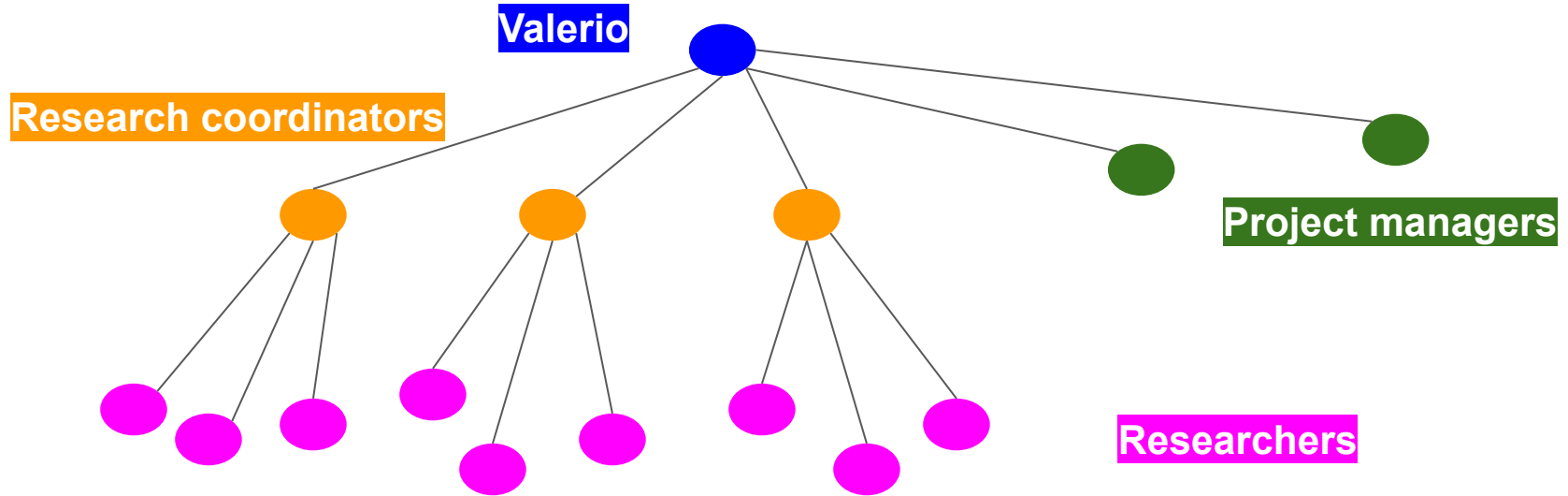


Researchers

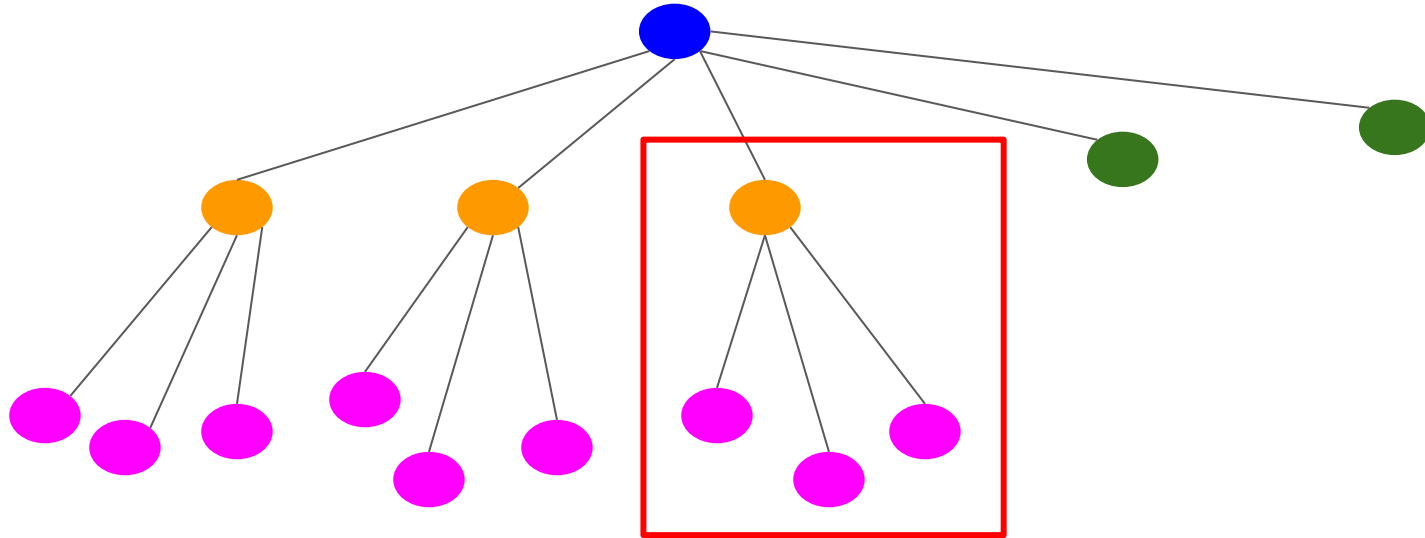
Hierarchical structure



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Hierarchical structure



Research group

Project managers

- Coordinate contributors
- Coordinate activities
- Ensure contributors follow correct workflows (e.g., on Google Doc, Trello)
- Help coordinate meetings
- Take notes at meetings
- Organise the Google Drive folder
- Maintain the project website
- Moderate conversations on the *#open-source-research* channel
- Be a point of reference for contributors
- ...

Project managers skills

- Experience managing projects
- Experience working / managing teams
- Ready to learn a lot on the field
- Flexible, organised, good communication skills
- Experience with open source projects



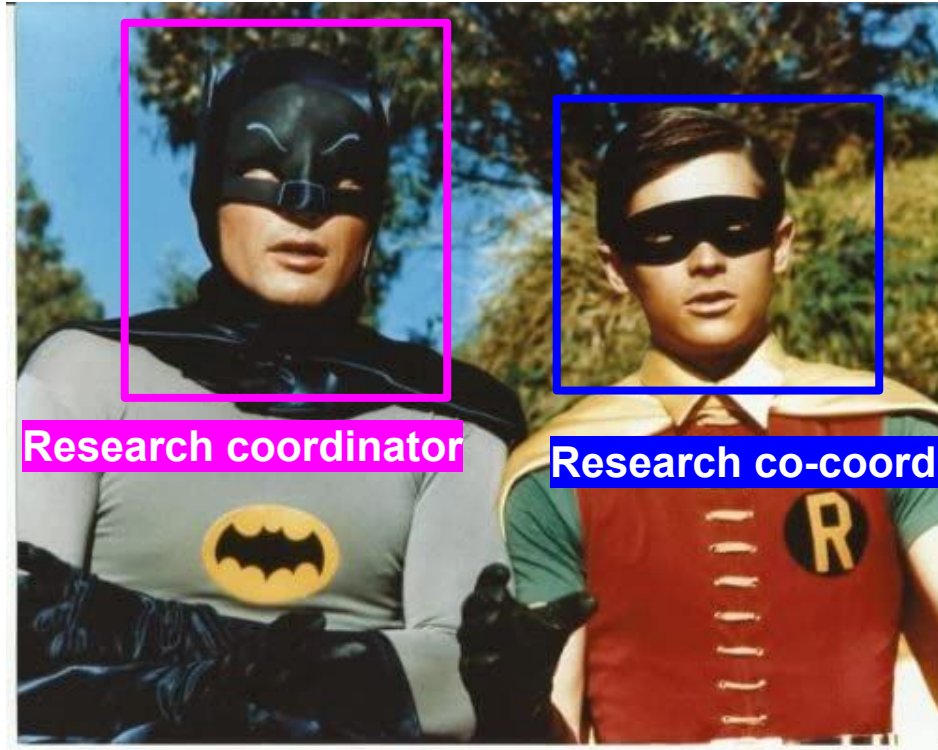
WE WANT YOU!

Research coordinators

- Be in charge of a specific aspect of the research (e.g., coding, evaluation, ...)
- Steer research decisions
- Lead small group of researchers
- Coordinate research / coding / user experiments
- ...

Research co-coordinator (Ruby's suggestion)

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Research coordinator skills

- Experience carrying out research
- Experience managing research teams
- Flexible, organised, good communication skills
- Mentor attitude



WE WANT YOU!

Again

PMs + RCs commitment

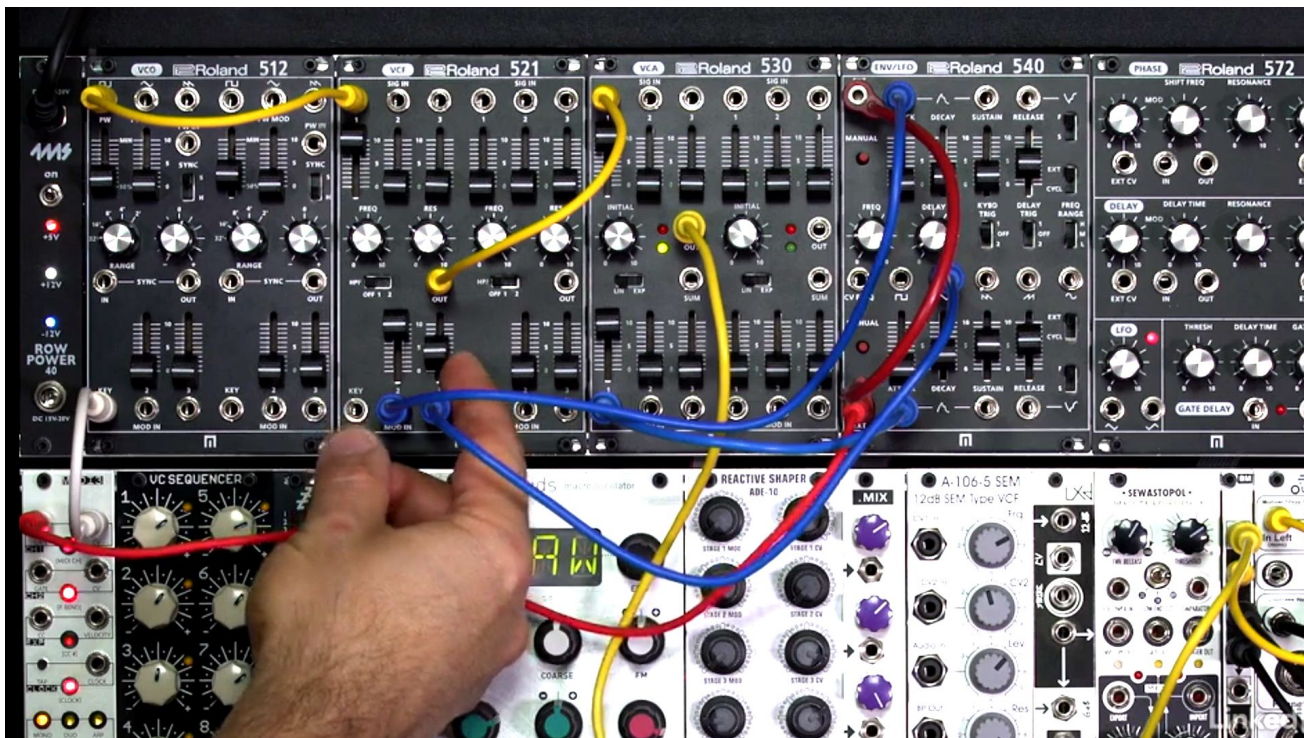
- 4-6hr / week
- Weekly coordinators meeting (Valerio + PMs + RCs)
- Meetings with research group
- PMs / RCs only focus on a subset of responsibilities

Research group

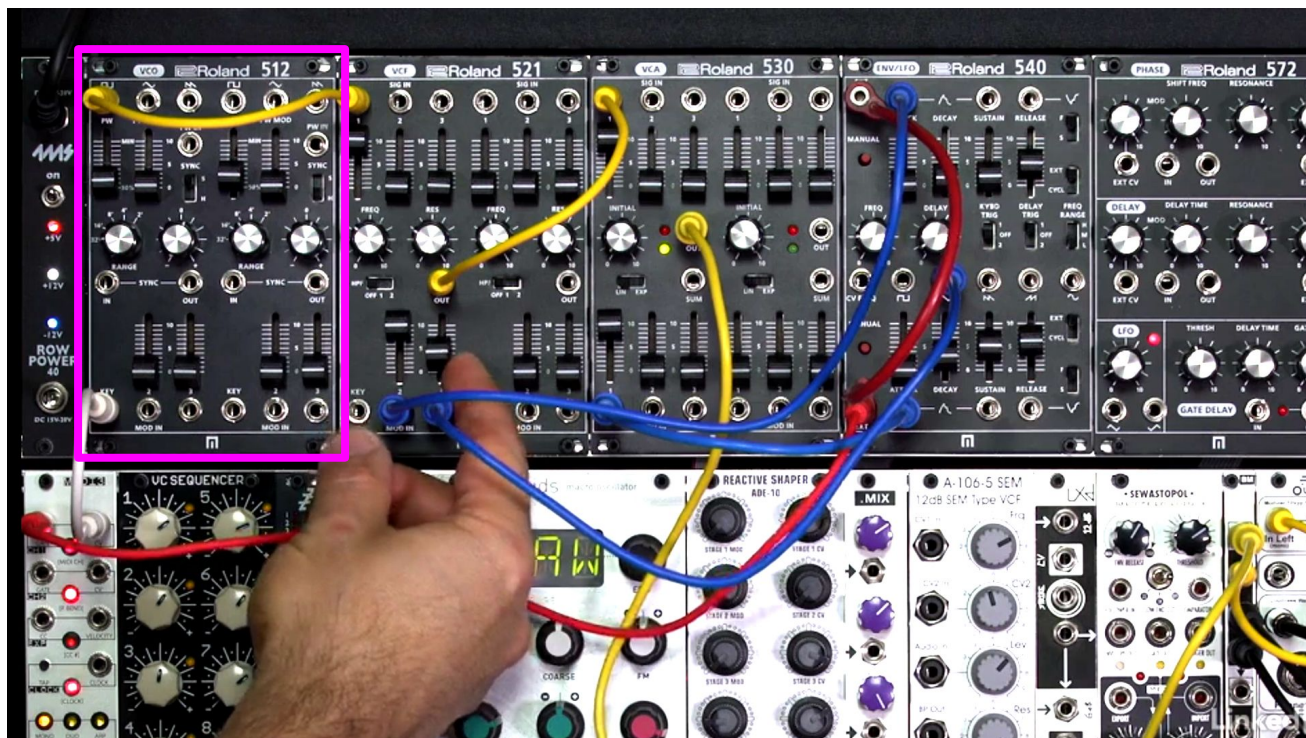
- Independent functional research unit
- 5-8 researchers
- Carry out research on a subtopic / theme independently
- Managed by coordinator / co-coordinator

Multiple groups working on a single paper?!

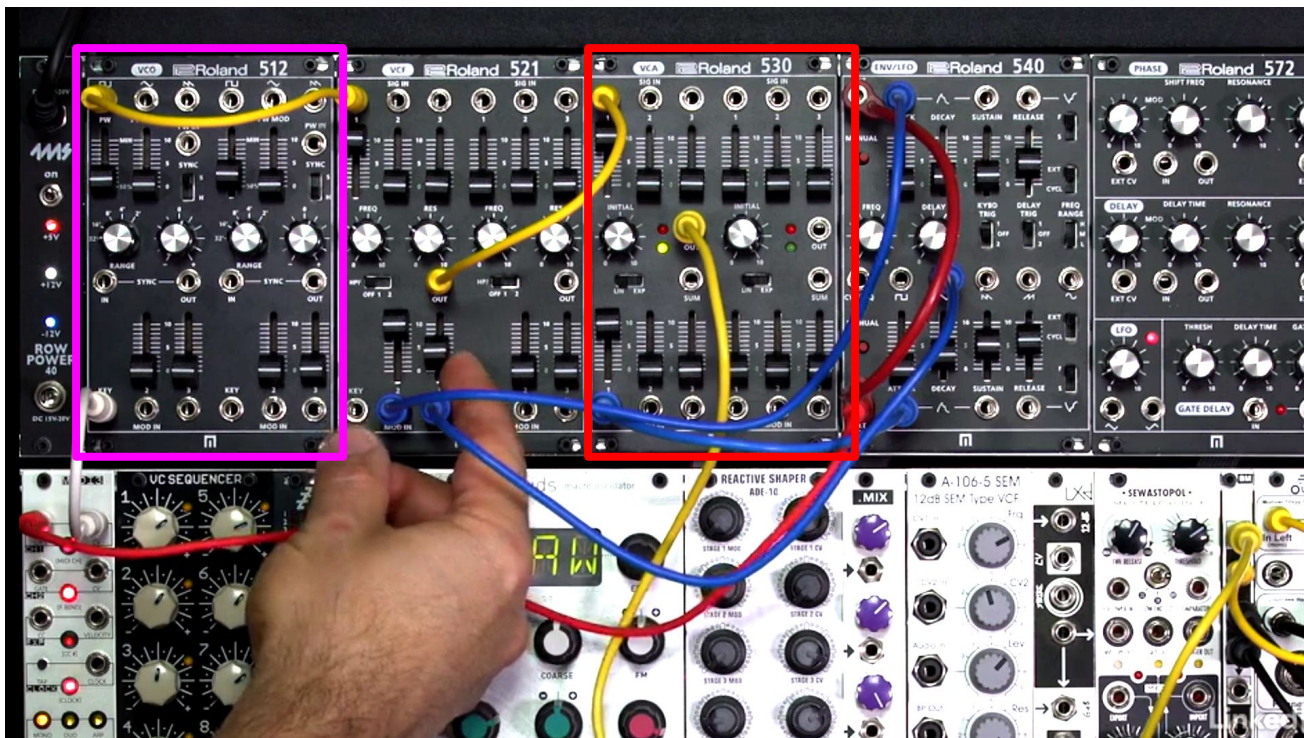
Multiple groups working on a single paper?!



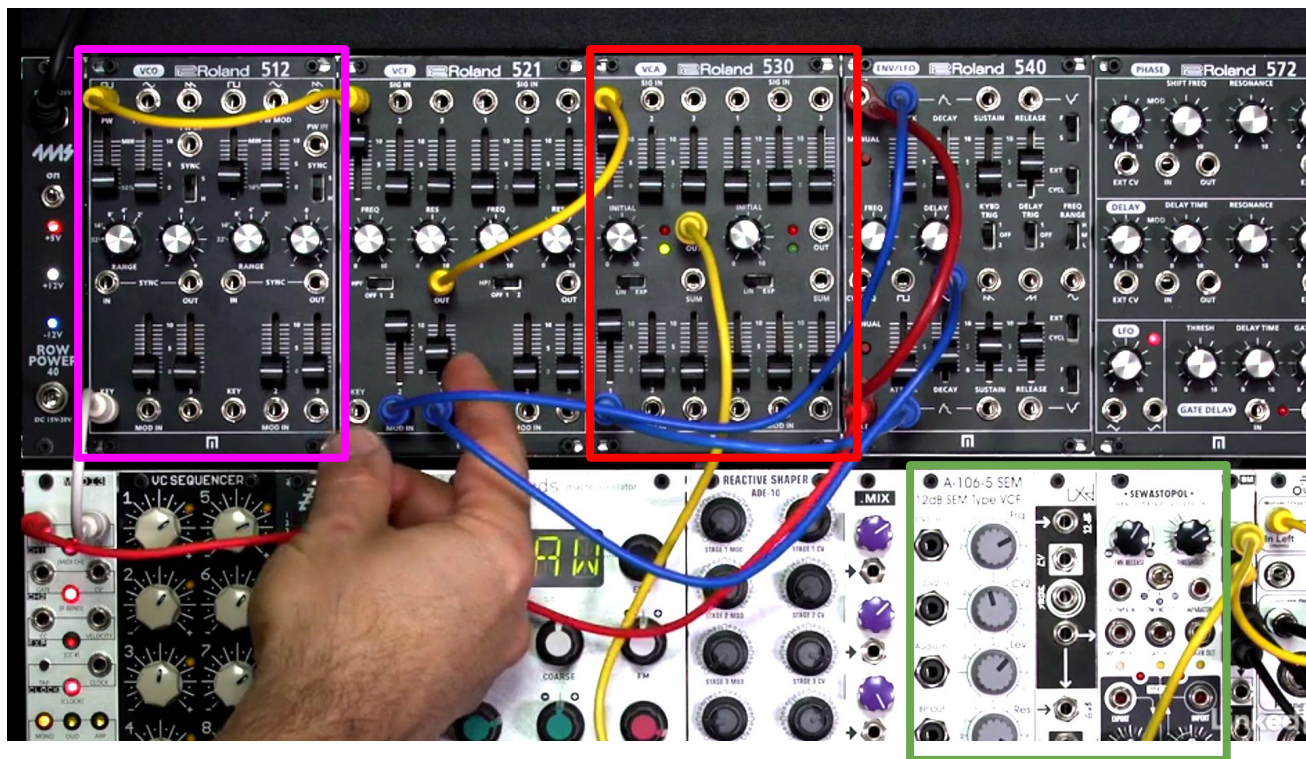
Multiple groups working on a single paper?!



Multiple groups working on a single paper?!



Multiple groups working on a single paper?!



Multiple groups working on a single paper?!

- *Divide and conquer* research approach
- Select modular topic?
- E.g., 1 group working on music generation, 1 on text analysis, 1 on image processing...

2- Project management tools and workflows

Project tools

- *OpenSource Research* mailing list: Community-wide updates, schedule meeting, ...

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- [Trello](#): Coordinate work, keep track of tasks

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- GoogleMeet for community meetings

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- Researchers meetings

Copyright

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Credits: The problem

A variational autoencoder for music generation controlled by tonal tension

Rui Guo¹, Ivor Simpson¹, Thor Magnusson¹, Chris Kiefer¹, and Dorien Herremans²

¹ University of Sussex

² Singapore University of Technology and Design

Abstract. Many of the music generation systems based on neural networks are fully autonomous and do not offer control over the generation process. In this research, we present a controllable music generation system in terms of tonal tension. We incorporate two tonal tension measures based on the Spiral Array Tension theory into a variational autoencoder model. This allows us to control the direction of the tonal tension throughout the generated piece, as well as the overall level of tonal tension. Given a seed musical fragment, stemming from either the user input or from directly sampling from the latent space, the model can generate variations of this original seed fragment with altered tonal tension. This altered music still resembles the seed music rhythmically, but the pitch of the notes are changed to match the desired tonal tension as conditioned by the user.

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The Sound of AI Community

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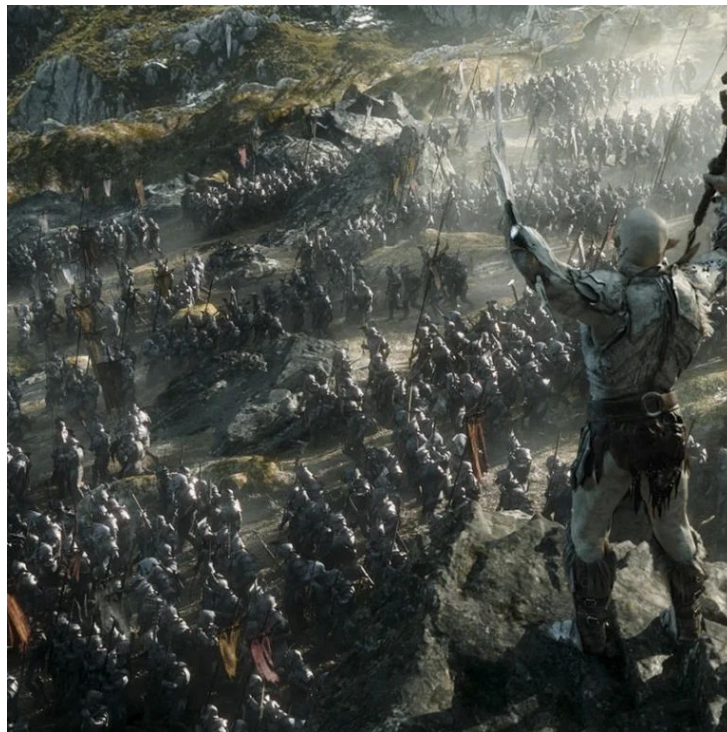
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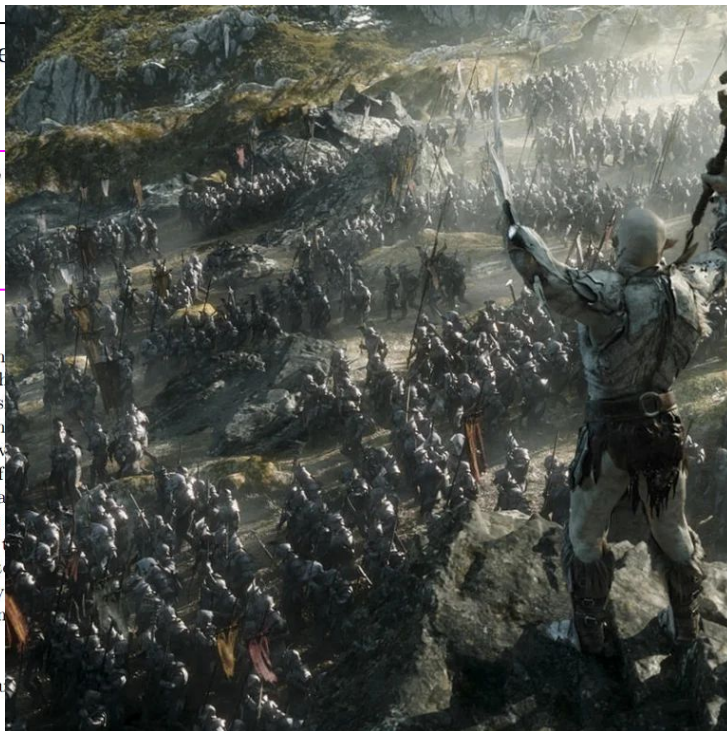
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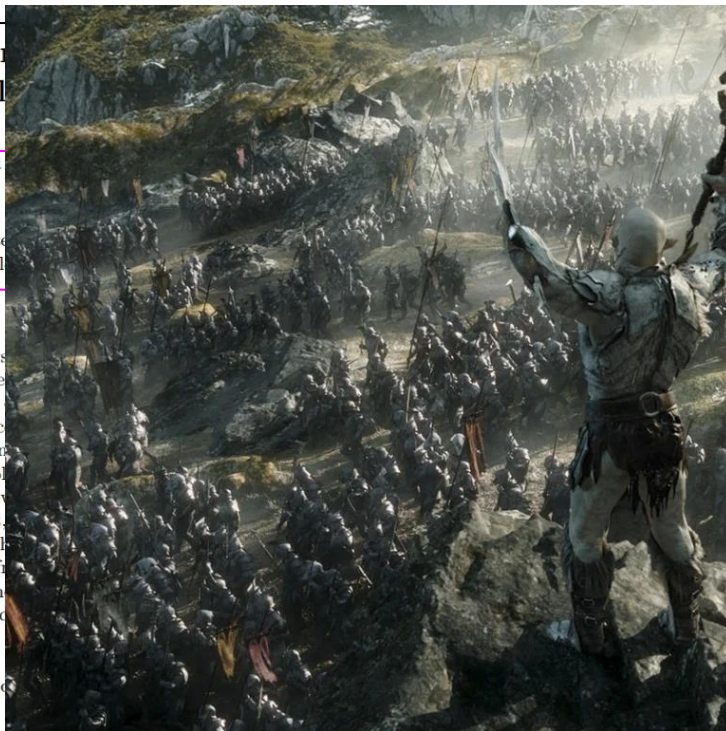
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Keywords: music generation, generative models, tonal tension



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A variational autoencoder controlled by

Rui Guo¹, Ivor Simpson¹, Thor M.
Herrnstein²

¹ Univers

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Rui Guo

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- Use [CRediT](#): Contributors Role Taxonomy

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3- Goals for step 1

Project steps

Topic selection

Literature review

Solution design

Solution implementation

Evaluation

Write up

Submission

Revisions

Project steps

Preparation

Topic selection

Literature review

Solution design

Solution implementation

Evaluation

Write up

Submission

Revisions

Preparation step schedule

Saturday 14 - Saturday 28
November 2020

Goals for Preparation

- Familiarise with AI Music Creativity
- Appoint project managers / research coordinators
- Define project managers / research coordinators responsibilities
- Familiarise with project tools
- Add yourself to contributor list
- Suggest 1 research topic

What *familiarise* doesn't mean

- Read all the academic literature in the space
- Know all the (AI) techniques used in AI Music Creativity
- Become an expert in AI Music Creativity

What *familiarise* actually means

- What are the boundaries of AI Music Creativity?
- What are the conferences / journals of reference in the space?
- What are the topics researched?
- What are the open debates / trendy topics?
- What are the main actors involved (industry / academia)?
- What are the topics of interest in the *AI Music Creativity Conference*

How do I familiarise with AI Music Creativity?

Read *AI Music Creativity Start Resources*

Appoint project managers / research coordinators

- Propose as a PM / RC on Slack in *#open-source-research*
- PMs / RCs please fill the [Coordinators spreadsheet](#)
- Appoint PMs by end of Preparation
- RCs first screen

Define PMs / RCs responsibilities

- Valerio to align with PMs / RCs
- Valerio + PMs / RCs to decide responsibilities together
- Write up decisions in [Coordinators responsibilities doc](#)

How do I familiarise with the project tools?

Read *Get started with project tools*

How do I add myself to the contributor list?

Fill this spreadsheet with your info

Suggest 1 research topic

- Come up with 1 research topic in AI Music Creativity you'd like to work on
- Write your research topic in the [Suggested project topics](#) spreadsheet

4- Next community meeting

Next community meeting

- Saturday 28th (2pm CET?)

Next community meeting

- Saturday 28th (2pm CET?)
- What will we discuss?
 - PMs / RCs presentation
 - Introduce PMs / RCs responsibilities
 - Go through suggested topics
 - Outline goals for step 2



5- Presentations

Let's know each other

- What's your name?
- Where are you from?
- What's your background?
- Why did you join *OpenSource Research*?