

# Virtual Symphony Orchestra

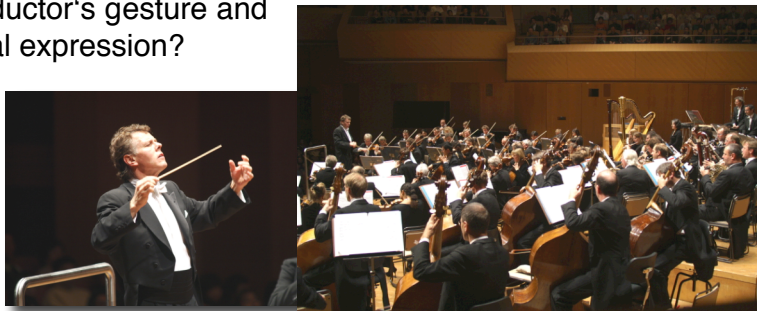
## A Playful Introduction into Conducting

VSO is a project in collaboration with the Bavarian radio symphony orchestra under the direction of Mariss Jansons. The vision is a virtual symphony orchestra which can be conducted by children.

**Participants:** Bakr Albatran, Dimitri Alexeev, Daniel Angermeier, Oliver Arafat, Jan Birke, Bernd Brügge, Eva Fenzl, Jason Franklin, Catinca Golesteanu, Nicolas Heuser, Christian Hörwick, Volker Iden, Christian Kern, Michael Knapp, Peter Lachenmaier, Kariem Morsy, Martin Ott, Florian Schneider, Christian Schröder, Harald Stangl, Christoph Teschner, Federico Tessmann, Leon von Tippelskirch, Periklis Tsirakidis, Benedikt Übe, Timo Wolf, Diego Wyllie, Vera Yordanova und das **Auritus-Quartett:** Key-Thomas Märkl, Leopold Lercher, Klaus-Peter Werani, Stefan Trauer

### Modeling Intention:

- How can we recognize the conductor's gesture and facial expression?



### Collaboration:

- How do musicians communicate among themselves and with the conductor?



### Learning:

- How to learn to conduct from a professional?
- Is a computer able to recognize conductor patterns?
- Machine learning

### Multimodal Input:

- Language, gesture and facial expression
- Augmented Reality



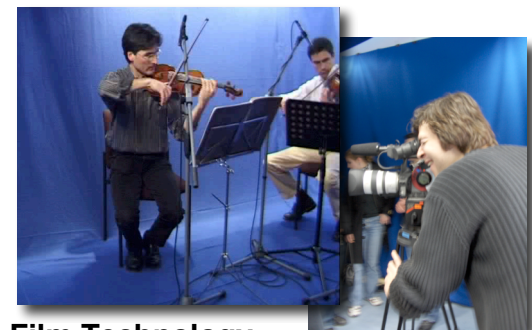
### System Requirements:

- Scalability, usability, performance



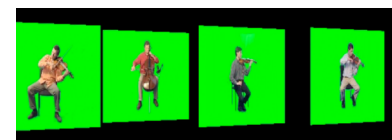
### Algorithms:

- Time stretching and video stretching methods
- Neural networks



### Film Technology:

- Bluescreening



### Performance Experience:

- Computer support for concert performance



### Multimodal Output:

- 3D video, stereo and surround sound



### Configurability:

Orchestra (quartet, chamber orchestra, full orchestra, user-defined orchestra)  
 Room (concert hall, cathedral, living room)

Project Portal: <http://www.bruegge.in.tum.de/VSO>