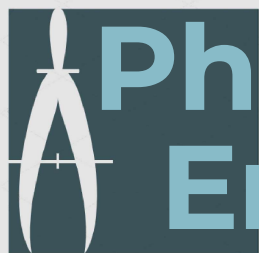


Summer School on

2019

25-31
AUGUST

Haus der Universität
Schadowplatz 14 40212 Düsseldorf
Universität Düsseldorf



Philosophical Engineering

Instructors

Eckhart Arnold (Munich)

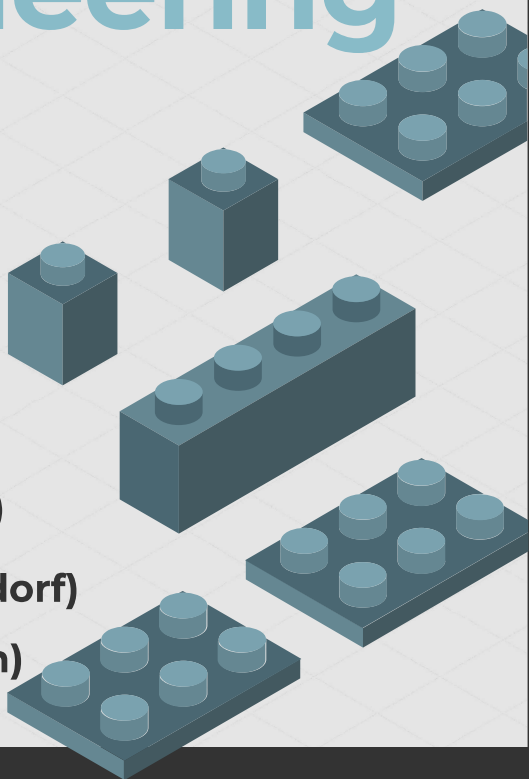
Elke Brendel (Bonn)

Filippo Ferrari (Bonn)

Simon Huttegger (Irvine)

Corina Strößner (Düsseldorf)

Leander Vignero (Leuven)



<http://dclps.phil.hhu.de/engineering/> (web)

christian.feldbacher-escamilla@hhu.de (organisation & contact)

Heinrich Heine
HEINRICH HEINE
UNIVERSITÄT DÜSSELDORF

DC LPS

DFG Deutsche
Forschungsgemeinschaft

Inductive
Metaphysics

Summer School on Philosophical Engineering

Contents

1	Summer School Details	1
2	Instructors	2
3	General Description	3
4	Schedule	4
5	Session on <i>Logical Devising</i>	7
6	Session on <i>Probability Theory</i>	9
7	Session on <i>Game Theory</i>	12
8	Session on <i>Computer Simulations with Python</i>	13
9	Session on <i>Improvisation on Statistics with R</i>	16
10	Venue Map and Routes	18
11	Practicalities	19

1 Summer School Details

- Date: August 25–31, 2019
- Venue: Haus der Universität
(Schadowplatz 14, 40212 Düsseldorf)
- Funding: *University of Duesseldorf*, the *Duesseldorf Center for Logic and Philosophy of Science* (DCLPS), and the DFG funded research group *Inductive Metaphysics*
- Organisation: Christian J. Feldbacher-Escamilla (DCLPS, University of Duesseldorf)
- Contact: christian.feldbacher-escamilla@hhu.de
- Website: <http://dclps.phil.hhu.de/engineering/>

2 Instructors

- **Eckhart Arnold** (Bavarian Academy of Sciences and Humanities)
Eckhart Arnold is head of the division Digital Humanities of the Bavarian Academy of Sciences and Humanities; his area of specialisation is within philosophy of science, epistemology, political and legal philosophy; his methodological focus is on simulation-based research and programming. For more information about him, please visit his [website](#).
- **Elke Brendel** (University of Bonn)
Elke Brendel is chairholder for logic and basic research at the University of Bonn. Her area of specialisation is within logic, the theory of argumentation, epistemology, philosophy of science, and philosophy of language. Currently, she is particularly focusing on problems of logical pluralism. For more information about her, please visit her [website](#).
- **Filippo Ferrari** (University of Bonn)
Filippo Ferrari is research fellow at the Institute of Philosophy of the University of Bonn. His area of specialisation is within philosophy of language, epistemology, and philosophy of logic. Currently, his research focuses on foundational issues on disagreement, deflationism and pluralism about truth, as well as on the normativity of belief and reasoning. For more information about him, please visit his [website](#).
- **Simon Huttegger** (University of California, Irvine)
Simon Huttegger is professor at the University of California, Irvine, where he teaches at the Department of Logic and Philosophy of Science. His area of research is within game and decision theory, philosophy of science, the foundations of probability, the theory of measurement, and the philosophy of biology. For more information about him, please visit his [website](#).

- **Corina Strößner** (DCLPS, University of Duesseldorf)
Corina Strößner is PostDoc at the Duesseldorf Center for Logic and Philosophy of Science. Her area of research is within formal epistemology, formal semantics, and philosophy of logic. For more information about her, please visit her [website](#).
- **Leander Vignero** (KU Leuven)
Leander Vignero obtained an MSc in Mathematics before studying Philosophy at KU Leuven. His main area of research is within probability theory, Bayesianism, and rational speech act theory. For more information about him, please visit his [website](#).

3 General Description

Contemporary analytic philosophy makes heavy use of formal methods. However, most of the time people engaged in such a formal endeavour are highly specialised, for which reason they quite often focus on one particular branch of formal philosophy. This is also reflected in contemporary philosophical curricula, which typically offer highly specialised courses on particular formal methods, but only rarely cover a broad range of them; and if they do, then these interdisciplinary methods are typically applied to a very particular subject only. This summer school aims at providing an introductory overview of the main methods applied in formal philosophy or *philosophical engineering*: logical, probabilistic, and game-theoretical devising, model building, programming and simulating, and employing digital resources in the broader realm of digital humanities. By bringing together international experts in these fields, participants will gain competencies in applying a broad range of formal methods in their field of interest; for this purpose, each of the mentioned topics is covered by professional instructions, exercises, interactive group work, and the discussion of results by the participants. Furthermore, participants will be provided with opportunities to independently deepen their competencies in a particular topic of interest following completion of the course.

4 Schedule

DAY 1, Sunday, August 25, 2019	
Wilma Wunder, Martin-Luther-Platz 27, 40212 Düsseldorf	
16:00-17:30	Welcome & Introduction
17:30	Dinner

DAY 2, Monday, August 26, 2019, Haus der Universität	
09:00-12:00	Logical Devising (Elke Brendel & Filippo Ferrari)
12:00-13:30	Lunch
13:30-15:30	Logical Devising (Elke Brendel & Filippo Ferrari)
15:30-16:00	Coffee Break
16:00-18:00	Logical Devising (Elke Brendel & Filippo Ferrari)
18:30	Dinner

DAY 3, Tuesday, August 27, 2019, Haus der Universität	
09:00-12:00	Logical Devising (Elke Brendel & Filippo Ferrari)
12:00-13:30	Lunch
13:30-15:30	Probability Theory (Leander Vignero)
15:30-16:00	Coffee Break
16:00-18:00	Probability Theory (Leander Vignero)
18:30	Dinner

Schedule (Continued)

DAY 4, Wednesday, August 28, 2019, Haus der Universität	
09:00-12:00	Probability Theory (Leander Vignero)
12:00-13:30	Lunch
13:30-15:30	Introduction to Game Theory (Simon Huttegger)
15:30-16:00	Coffee Break
16:00-18:00	Introduction to Game Theory (Simon Huttegger)
18:30	Dinner

DAY 5, Thursday, August 29, 2019, Haus der Universität	
09:00-12:00	Introduction to Game Theory (Simon Huttegger)
12:00-13:30	Lunch
13:30-15:30	Introduction to Game Theory (Simon Huttegger)
15:30-16:00	Coffee Break
16:00-18:00	Introduction to Game Theory (Simon Huttegger)
18:30	Dinner

Schedule (Continued)

DAY 6, Friday, August 30, 2019, Haus der Universität	
09:00-12:00	Computer Simulations with Python (Eckhart Arnold)
12:00-13:30	Lunch
13:30-15:30	Computer Simulations with Python (Eckhart Arnold)
15:30-16:00	Coffee Break
16:00-18:00	Computer Simulations with Python (Eckhart Arnold)
18:30	Dinner


DAY 7, Saturday, August 31, 2019, Haus der Universität	
09:00-12:00	Computer Simulations with Python (Eckhart Arnold)
12:00-13:30	Lunch
13:30-16:00	Improvisation on Statistics with R (Corina Ströbner)
16:00	Farewell

5 Session on *Logical Devising*

Instructors.

Elke Brendel (University of Bonn) & Filippo Ferrari (University of Bonn)

Short Description.

 In the first part of this course we will give a rough overview of various classical and non-classical logics, such as classical first-order logic, systems of modal logic, free logic, paracomplete and paraconsistent logics. We will then discuss the prospects and limits of logic as a tool of philosophical inquiry. In particular, we will examine how logic can help to formalize and analyse key philosophical questions, as, for example, certain questions concerning necessity, existence, causality and truth, and how logic can help us to detect reasoning fallacies and paradoxes.

The second part focuses on recent debates in the philosophy of logic. We first review the debate between logical monists—who believe that there is only one correct logic—and logical pluralists—who believe that there is a plurality of correct logics. We then discuss the so-called *anti-exceptionalist view about logic* according to which logic doesn't enjoy an exceptional methodological and epistemological status among the sciences. In so doing, we explore different ways of being anti-exceptionalists with the aim of critically discuss some views that have been advanced in the literature. Particular emphasis will be given to the question whether and to what extent logic is a normative discipline.

Main Sources (non-obligatory pre-reading).

- Hjortland, Ole T. (2017): “Anti-Exceptionalism about Logic”. *Philosophical Studies* 174, pp.631-658, DOI: [10.1007/s11098-016-0701-8](https://doi.org/10.1007/s11098-016-0701-8).
- Priest, Graham (2008): *An Introduction to Non-Classical Logic*. New York: Cambridge University Press, DOI: [10.1017/CBO9780511801174](https://doi.org/10.1017/CBO9780511801174).
- Russell, Gillian (2019): “Logical Pluralism”. In: Edward N. Zalta (ed.) *The Stanford Encyclopedia of Philosophy (Summer 2019 Edition)*, URL:

<https://plato.stanford.edu/archives/sum2019/entries/logical-pluralism/>).

Further Sources (for independently deepening one’s understanding after the summer school).

- Beall, JC & Restall, Greg (2006): *Logical Pluralism*. Oxford: Oxford University Press.
- Cohnitz, Daniel & Estrada-González, Luis (2019): *An Introduction to the Philosophy of Logic*. Cambridge: Cambridge University Press, DOI: [10.1017/9781316275573](https://doi.org/10.1017/9781316275573).
- da Costa, Newton & Arenhart, Jonas R. (2018): “Full-Blooded Anti-Exceptionalism about Logic”. *Australasian Journal of Logic* 15, pp.362-380, DOI: [10.26686/ajl.v15i2.4865](https://doi.org/10.26686/ajl.v15i2.4865).
- Sainsbury, R. Mark (2002): “What Logic Should We Think With?” *Royal Institute of Philosophy Supplements* 51, pp.1-17, DOI: [10.1017/S1358246100008055](https://doi.org/10.1017/S1358246100008055).
- Williamson, Timothy (2018): *Doing Philosophy: From Common Curiosity to Logical Reasoning*. Oxford: Oxford University Press.

Software.


N/A

6 Session on *Probability Theory*

Instructor.

Leander Vignero (KU Leuven)

Short Description.

robability plays an important role in many aspects of our lives and has generated a considerable body of literature in philosophy over the years. Recently however, the literature has started to take a computational turn, with simulations and computational models taking on ever greater importance. In this course, we will connect the philosophical literature to empirical and computational work. The first session will cover some of the philosophical work relating to probability theory from a broadly Bayesian perspective. The second session will familiarize the participants with some relevant empirical work and the upcoming computational approach in philosophy. We will also consider some of the basic techniques behind these models. Finally, in the third session we will do an extended case study: the Rational Speech Act (RSA) framework. Put briefly, RSA implements Gricean ideas from linguistics and philosophy of language probabilistically. No programming skills are required for this course. But supplementary material will be provided for those who have any such skills.

Main Sources (non-obligatory pre-reading).

- Easwaran, Kenny (2011a). “Bayesianism I: Introduction and arguments in favor”. *Philosophy Compass* 6(5), pp.312-320, DOI: [10.1111/j.1747-9991.2011.00399.x](https://doi.org/10.1111/j.1747-9991.2011.00399.x).
- Easwaran, Kenny (2011b). “Bayesianism II: Applications and criticisms”. *Philosophy Compass* 6(5), pp.321-332, DOI: [10.1111/j.1747-9991.2011.00398.x](https://doi.org/10.1111/j.1747-9991.2011.00398.x).

Further Sources (for independently deepening one’s understanding after the summer school).

- Bayesianism.
 - *In General*.
 - * See the references in Easwaran (2011a, 2011b) as provided above.
 - *Interpretation of Probability*.
 - * Hájek, Alan (2011): “Interpretations of Probability”. In: Edward N. Zalta (ed.) *The Stanford Encyclopedia of Philosophy (Winter 2012 Edition)*, URL: <https://plato.stanford.edu/archives/win2012/entries/probability-interpret/>. (This contribution references classics like the work by Ramsey and de Finetti. It also provides an overview of alternative positions, propensity interpretations for instance, which are not covered in the session.)
 - *Bayesianism in the Sciences*.
 - * Barber, David (2012): *Bayesian Reasoning and Machine Learning*. Cambridge: Cambridge University Press. (To acquire an advanced mathematical background; it is not a real statistics course, but it will give you a strong technical understanding.)
 - *Bayesian Epistemology*.
 - * Talbott, William (2016): “Bayesian Epistemology”. In: Edward N. Zalta (ed.) *The Stanford Encyclopedia of Philosophy (Winter 2016 Edition)*, URL: <https://plato.stanford.edu/archives/win2016/entries/epistemology-bayesian/>. (A good point of departure.)
 - * Strevens, Michael (2017): “Notes on Bayesian Confirmation Theory”. Lecture Notes/Unpublished Manuscript, URL: <http://www.nyu.edu/classes/strevens/BCT/BCT.pdf>.
- Empirical Work.
 - Tetlock, Philip E. & Gardner, Dan (2016): *Superforecasting: The art and science of prediction*. Random House. (Philip

Tetlock is one of the leading figures in this field; his work spans many years and many papers, but a good way to approach the literature is this popularizing book. It will familiarize you just enough to explore the vast technical literature on your own.)

- RSA.
 - Scontras, Gregory & Tessler, Michael H. & Franke, Michael (2018): *Probabilistic Language Understanding: An introduction to the Rational Speech Act framework*. Online Source, (retrieved 2019-07-01), URL: (<https://www.problang.org/>). (A very good introduction to RSA; it is also a good introduction to the WebPPL language;)
 - Frank, Michael C. & Goodman, Noah D. (2012): “Predicting Pragmatic Reasoning in Language Games”. *Science* 336(6084), pp.998-998, DOI: [10.1126/science.1218633](https://doi.org/10.1126/science.1218633). (A classic;)
 - Goodman, Noah D. & Stuhlmüller, Andreas (2013): “Knowledge and Implicature: Modeling language understanding as social cognition”. *Topics in Cognitive Science* 5(1), pp.173-184, DOI: [10.1111/tops.12007](https://doi.org/10.1111/tops.12007). (Another classic;)

Software.

- Julia: <https://julialang.org/learning/>
(There are many languages you can use to run simulations in philosophy. Python is one obvious candidate. However, Julia is built with probabilities in mind and is also used in philosophy. A great way to learn many things in one go is:
 - Klok, Hayden & Nazarathy, Yoni (2019, draft): *Statistics with Julia: Fundamentals for Data Science, Machine Learning and Artificial Intelligence*. Online Source, (retrieved 2019-07-01), URL: (<https://people.smp.uq.edu.au/YoniNazarathy/julia-stats/StatisticsWithJulia.pdf>).


This source touches on many of the key ideas which will be outlining in the course. Nevertheless, there are also many other good tutorials out there. A good place to start looking is the mentioned website.)

7 Session on *Game Theory*

Instructor.

Simon Huttegger (University of California, Irvine)

Short Description.

his class introduces students to the main concepts and methods in game theory. We will cover games in normal and extensive form, Nash equilibrium and backward induction, and the basics of evolutionary game theory. Special attention is being paid to examples of philosophical interest.

Main Sources (non-obligatory pre-reading).

- Dixit, Avinash & Skeath, Susan & Reily, David (2015): *Games of Strategy*. London: W.W. Norton & Company.
- Hofbauer, Josef & Sigmund, Karl (1998): *Evolutionary Games and Population Dynamics*. Cambridge: Cambridge University Press, DOI: [10.1017/CBO9781139173179](https://doi.org/10.1017/CBO9781139173179)
- Osborne, Martin & Rubinstein, Ariel (1994): *A Course in Game Theory*. Cambridge, MA: MIT Press.
- Skyrms, Brian (1994): *Evolution of the Social Contract*. Cambridge: Cambridge University Press, DOI: [10.1017/CBO9780511806308](https://doi.org/10.1017/CBO9780511806308)
- Weibull, Jörgen (1995): *Evolutionary Game Theory*. Cambridge, MA: MIT Press.

Further Sources (for independently deepening one's understanding after the summer school).

- See above.

Software.


N/A

8 Session on *Computer Simulations with Python*

Instructor.

Eckhart Arnold (Bavarian Academy of Sciences and Humanities)

Short Description.

his course of the summer school is going to be an Introduction to Computer-Programming with Python. The course is meant to be for (absolute) beginners and does not assume any prior knowledge of either Python or computer programming. Python is an easy, yet powerful computer language that is particularly well suited for scientific programming.

During the course, we'll develop a game-theoretical computer simulation of the Prisoner's Dilemma as a (hopefully motivating) pet project. After finishing the course, you'll be able to write small Python scripts and more importantly, you'll have enough knowledge and understanding of Python to learn more by teaching yourself from web-tutorials and other sources.

If time permits, we will also have a bit of philosophical discussion on the epistemology of computer simulations. (Little spoiler: It's the easy part to get the computer programming right. It's the hard part to assess the theoretical scope and the empirical validity of a computer simulation. But just why this is the case, we will discuss in the summer school.)

Main Sources (non-obligatory pre-reading).

- Suitable for those who know nothing about computer programming, yet (in German): http://eckhartarnold.de/teaching/python_and_nengo_intro.html
- For people who already know some other programming language, like netlogo: <https://docs.python.org/3/tutorial/index.html>

Further Sources (for independently deepening one's understanding after the summer school).

- Jupyter Notebook Start Guide: https://jupyter-notebook-beginner-guide.readthedocs.io/en/latest/what_is_jupyter.html
- Matplotlib Beginner's Guide: <https://matplotlib.org/users/beginner.html>

- Introductions to several of the most useful tool's for scientific computing (warning: you'll probably need to know Python quite well already; if not, go through the Python tutorial first): [⟨https://docs.scipy.org/doc/scipy/reference/tutorial/index.html⟩](https://docs.scipy.org/doc/scipy/reference/tutorial/index.html)
- A duly critical discussion of the limits of the Prisoner's Dilemma as an explanatory model: Northcott, Robert & Alexandrova, Anna (2015): "Prisoner's Dilemma doesn't explain much". In: Peterson, Martin (ed.): *The Prisoner's Dilemma*. Cambridge: Cambridge University Press, pp.64-84, DOI: [10.1017/CBO9781107360174.005](https://doi.org/10.1017/CBO9781107360174.005)
- Just to give you an idea of why programming the model itself is not the hardest part when using computer simulations in the context of scientific explanations for actual empirical phenomena: Lee, Ju-Sung & Filatova, Tatiana & Ligmann-Zielinska, Arika & Hassani-Mahmooei, Behrooz & Stonedahl, Forrest & Lorscheid, Iris & Voinov, Alexey & Polhill, J. Gary & Sun, Zhanli & Parker, Dawn C. (2015): "The Complexities of Agent-Based Modeling Output Analysis" *Journal of Artificial Societies and Social Simulation* 18(4), DOI: [10.18564/jasss.2897](https://doi.org/10.18564/jasss.2897)

Software.

Please download and install this on your Laptop before the summer school:

- Python (≥ 3.0): [⟨https://www.python.org/⟩](https://www.python.org/)
(just this, if you use linux, install Python3 from your app-store or package manager)

Additional Software:

- Do yourself a favour and use a good development environment. This is the best one and the "community edition" is free: [⟨https://www.jetbrains.com/pycharm/download/⟩](https://www.jetbrains.com/pycharm/download/)
- Rather than pointing out the many great packages for scientific computing with Python, I suggest that you use this comprehensive distribution that includes them all already. Saves you a lot of time of figuring out and fiddling with the right packages: [⟨https://www.anaconda.com/distribution/⟩](https://www.anaconda.com/distribution/)
- For those who already know so much that they do not need this course, but who are just curious about how to implement

a Prisoner's Dilemma simulation. (Warning: This code is not maintained any more and requires an OLD version of Python and wxPython to run!): <https://github.com/jecki/CoopSim/>


- Jupyter: <https://jupyter.org/>

9 Session on *Improvisation on Statistics with R*

Instructor.

Corina Strößner (University of Duesseldorf)

Short Description.

 In the current years, psychological methods became important in philosophy. For example, experimental philosophy (X-Phi) gathers empirical results on philosophical intuitions in a psychological way. Moreover, many philosophers are engaged in cognitive science where they have to understand and potentially apply psychological methodology. However, while philosophy students are usually equipped with solid background knowledge in formal logic, they rarely visit courses on statistics. With this event, I cannot and do not aspire to substitute for a propaedeutic (or advanced) statistics lecture. Instead, I will try to show you how to work out the prerequisites for your experimental work yourself. The first part will be quite general and applicable to different software (Excel, SPSS, and R). In the second part, we will focus on the free (and powerful) statistical software R. I will demonstrate how to learn and apply R for mixed effect modelling.

The course covers the following topics:

1. Understanding the basics of your software (and statistics)
2. Statistics first, ask questions later?
3. Exploiting the literature
4. R and its Packages
5. Mixed effect modelling with R and lme4

Main Sources (non-obligatory pre-reading).

In order to follow the course, you should get acquainted with the introductory sources. Do not try to read everything but please take three or four hours to get a feeling for how to use the sources. For example, have a look at the table of contents of the book Field et al. (2012), skim some chapters, and explore the online material.

- Introduction.
Have a look at (<https://www.discoveringstatistics.com/>) and, if

possible, at the introduction:

Field, Andy & Miles, Jeremy & Field, Zoë (2012): *Discovering Statistics using R*. London: Sage Publications.

- Mixed effect model tutorial by Bodo Winter.
(<http://www.bodowinter.com/tutorials.html>). The following files are especially relevant:
(http://www.bodowinter.com/tutorial/bw_LME_tutorial1.pdf)
(http://www.bodowinter.com/tutorial/bw_LME_tutorial2.pdf)

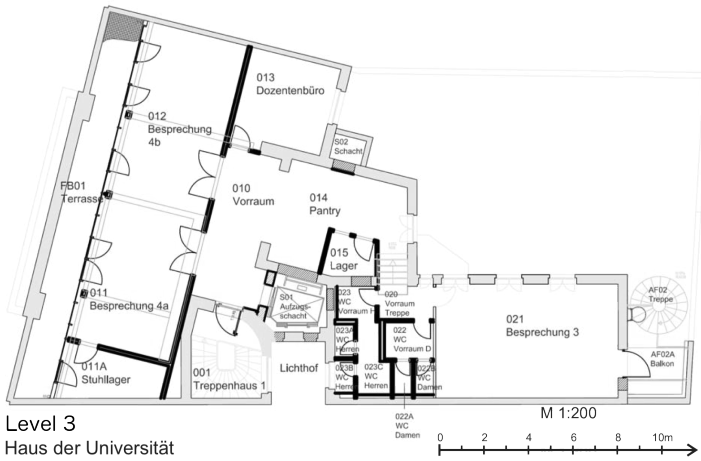
Further Sources (for independently deepening one’s understanding after the summer school).

- Baayen, R. Harald (2008): *Analyzing Linguistic Data: A practical introduction to statistics using R*. Cambridge: Cambridge University Press, DOI: [10.1017/CBO9780511801686](https://doi.org/10.1017/CBO9780511801686).
- Barr, Dale J. & Levy, Roger & Scheepers, Christoph & Tily, Harry J. (2013). “Random Effects Structure for Confirmatory Hypothesis Testing: Keep it maximal”. *Journal of Memory and Language* 68(3), pp.255-278, DOI: [10.1016/j.jml.2012.11.001](https://doi.org/10.1016/j.jml.2012.11.001).
- Bates, Douglas & Maechler, Martin & Bolker, Ben & Walker, Steve (2015): “Fitting Linear Mixed-Effects Models Using lme4”. *Journal of Statistical Software* 67(1), pp.1-48 DOI: [10.18637/jss.v067.i01](https://doi.org/10.18637/jss.v067.i01).

Software.

- R: (<http://www.r-project.org/>)
- Additional Packages: lme4, lmerTest, Rcmdr

10 Venue Map and Routes



11 Practicalities

Venue Accessibility.

All rooms are handicapped accessible. There are disabled toilets available and floors are connected via elevators. For support just contact the organisers.

Internet.

Eduroam is available at the whole venue: <https://www.eduroam.org/>.

ATM.

The nearest ATM is located at Schadowstraße 17 (distance: est. 30m).

Coffee and Refreshments.

Coffee and tea will be served during the refreshment breaks. There are also several coffee shops next to the venue.

Dinner Restaurants.

There are many nice restaurants in the city center. For traditional/local food you may consider:

- Brewery “Füchschen”: Ratinger Straße 28, 40213 Duesseldorf
- Brewery “Schlösser Quartier Bohème”: Ratinger Straße 25, 40213 Duesseldorf
- Brewery “Zum Schlüssel”: Bolkerstraße 41–47, 40213 Duesseldorf
- Restaurant “Zum Schwan”: Muehlenstraße 2, 40213 Duesseldorf
- Brewery “Uerige”: Berger Straße 1, 40213 Duesseldorf

We also recommend:

- Woyton am Schadowplatz: next to the venue
- Food Court at the Schadow-Arkaden: Schadowstraße 11, 40212 Duesseldorf
- Bistro Zicke: Bäckerstraße 5a, 40213 Duesseldorf
- Palio Poccino: Königsallee 2, 40212 Duesseldorf
- A Tavola: Wallstr. 11, 40213 Duesseldorf

- Wilma Wunder: Martin-Luther-Platz 27, 40212 Duesseldorf

Tourist Information.

Tourist information on the city of Duesseldorf and a city guide can be found at: (<http://www.duesseldorf-tourismus.de/en/brochures/>).

Police and Medical Assistance.

If you need to call the police or need an ambulance, the emergency number is 112.

On Arrival.

Transportation from/to airport: Please be aware that there are two airports associated with Duesseldorf: Duesseldorf Airport (DUS) and Airport Duesseldorf Weeze (NRN). While Duesseldorf Airport (DUS) is very close to the city, Airport Duesseldorf Weeze (NRN) is actually about 90 kilometers away from Duesseldorf. Transportation from Duesseldorf Airport (DUS) to the main station costs about 25 EUR with taxi and about 2,80 EUR with train. For the latter buy a zone A single fare ticket – valid up to 90 minutes after stamping – and take the train S11. Please find a map of Duesseldorf at: (<https://goo.gl/maps/8Z9RC>).

Public Transportation in Duesseldorf.

If you need to use buses, trams, or the metro, you might want to buy a single ticket (about 2,80 EUR), a day ticket (about 7,10 EUR), all for the zone A (the university is within this zone). There is also a 7-day ticket for about 22,50 EUR. The tickets can be purchased in the buses, trams (coins only), and the metro (coins only) as well as at ticket machines at the main station or the old town. You can find information about routes, timetables, and prices at the website of the Rheinbahn: <http://www.rheinbahn.de/>. To reach the venue from the main station, take any underground going to Heinrich-Heine-Allee.

Taxi.

You can phone up and book a taxi from a taxi office; call (24h): +49 (0)211 33333 or book at: <http://www.taxi-duesseldorf.com/>. A taxi from the airport to the main station costs about 25 EUR.

Accommodation.

If you want to book via us, please inform us when filling in the application form. If you want to book on your own, you find a selection

of hotels in Duesseldorf below. It is recommended that you make your reservations well ahead of time, because there are often trade fairs in Duesseldorf resulting in fully booked or very expensive hotels.

- *Motel One Main Station.*
Address: Immermannstrasse 54, 40210 Duesseldorf
- *Hotel Ibis Main Station.*
Address: Konrad-Adenauer-Platz 14, 40210 Duesseldorf