# Matthias Carl Laupichler PI\_anwesend () Erfasste Fragebögen = 4



Auswertungsteil der ge	eschlossenen Fragen
Legende Fragetext Relative Häufigkeiten der Antworten StdAbw.	Mittelwert Median 0% 50% 0% 25% Rechter Pol 2 3 4 5 Histogramm
1. Questions about the course (1)	
<sup>1.1)</sup> The difficulty of the lecture part of the course (i.e., theoretical input	ut by instructors) is
Far too	n=4
A little too	o low 0%
Just	right 75%
A little too	high 25%
Far too	high 0%
<sup>1.2)</sup> The difficulty of the exercise part of the course (e.g. programming	g exercises in python) is…
Far too	o low 0% <sup>n=4</sup>
A little too	o low 0%
Just	right 0%
A little too	high 100%
Far too	high 0%
<sup>1.3)</sup> The pace of the course is	
Far too s	slow 0% <sup>n=4</sup>
A little too s	slow 0%
Just	right 75%
A little too	o fast 25%
Way too	o fast 0%
<sup>1.4)</sup> Overall, I give the course the following school grade:	
"Ungenügend" / Unsatisfactor	ry (6) 0% n=4
"Mangelhaft" / Deficien	nt (5) 0%
"Ausreichend" / Sufficien	nt (4) 0%
"Befriedigend" / Satisfactor	ny (3) 0%
"Gut" / Good	bd (2) 50%
"Sehr gut" / Very good	bd (1) 50%

1.5)	Overall, I give the lecture part of the course (i.e., theor	etical input by in	structors	) the follov	ving scho	ol grade	:	
	"Ungenügend" /	Unsatisfactory (6)					0%	n=4
	"Mangel	haft" / Deficient (5)					0%	
	"Ausreiche	end" / Sufficient (4)					0%	
	"Befriedigend	d" / Satisfactory (3)					0%	
		"Gut" / Good (2)					25%	
	"Sehr g	gut" / Very good (1)					75%	
1.6)	Overall, I give the exercise part of the course (e.g., pro	ogramming exerc	cises in p	oython) the	following	school	grade:	
	"Ungenügend" /	Unsatisfactory (6)					0%	n=4
	"Mangel	haft" / Deficient (5)					0%	
	"Ausreiche	end" / Sufficient (4)					0%	
	"Befriedigend	d" / Satisfactory (3)					0%	
		"Gut" / Good (2)					50%	
	"Sehr g	gut" / Very good (1)					50%	
1.7)	The course is useful for supervising my research group.	Do not agree at all	0%	2 3	0%	100% 5	Fully agree	n=3 mw=5 md=5 s=0 E.=1
— — 1.8)	The amount of examples in the course was appropriate.	Do not agree at all	0%	2 3	25%	75%	Fully agree	n=4 mw=4,8 md=5 s=0,5
1.9)	Would you have preferred a greater proportion of theoretical input or a greater proportion of practical exercises? If you think that the ratio of theory and practice was good, please check a box in the middle of the scale.	More theoretical input	0% 0% 09	6 25% 0% 25% 4 5 6	25% 25% 0%	0% 0%	More practical exercises	n=4 mw=6,3 md=6,5 s=1,7
2.	Evaluation of Learning Objectives							
2.1)	<b>Python programming (in general):</b> My skills in this area <i>before</i> starting the course were	Very low	75%	25% 0% 	0%	0%	Very high	n=4 mw=1,3 md=1 s=0,5
2.2)	<b>Python programming (in general):</b> My skills in this area are <i>now</i>	Very low	0%	2 3		 0% 5	Very high	n=4 mw=2,3 md=2 s=0,5
2.3)	I can use the Linux terminal/console. My skills in this area <i>before</i> starting the course were	Very low	25%	25% 25%	25%	0%	Very high	n=4 mw=2,5 md=2,5 s=1,3
2.4)	I can use the Linux terminal/console. My skills in this area are <i>now</i>	Very low	0%	25% 50%	25%	0%	— — — — — — — — — — — — — — — — — — —	n=4 mw=3 md=3 s=0,8
2.5)	I can explain gradient descent techniques. My skills in this area <i>before</i> starting the course were	Very low	75%	25% 0%	0%	0%	Very high	n=4 mw=1,3 md=1 s=0,5

<ul> <li><sup>2.6)</sup> I can explain gradient descent techniques. My skills in this area are <i>now</i></li> </ul>	Very low	0% 25% 25% 50% 0% 1 2 3 4 5	Very high	n=4 mw=3,3 md=3,5 s=1
<ul> <li><sup>2.7)</sup> I can calculate descriptive statistics like mean, variance, and distribution in Python. My skills in this area <i>before</i> starting the course were</li> </ul>	Very low	50% 25% 0% 0% 25% 50% 25% 0% 0% 25% 1 2 3 4 5	Very high	n=4 mw=2,3 md=1,5 s=1,9
<ul> <li><sup>2.8)</sup> I can calculate descriptive statistics like mean, variance, and distribution in Python.</li> <li>My skills in this area are <i>now</i></li> </ul>	Very low	0% 25% 0% 50% 25% 0% 1 2 3 4 5	Very high	n=4 mw=3,8 md=4 s=1,3
<ul> <li><sup>2.9)</sup> I can explain the concept of Eigenvalues and their importance for PCA. My skills in this area <i>before</i> starting the course were</li> </ul>	Very low	33,3% 66,7% 0% 0% 0% 1 2 3 4 5	Very high	n=3 mw=1,7 md=2 s=0,6 E.=1
<ul> <li><sup>2.10)</sup> I can explain the concept of Eigenvalues and their importance for PCA.</li> <li>My skills in this area are <i>now</i></li> </ul>	Very low	0% 66,7% 0% 33,3% 0%	Very high	n=3 mw=2,7 md=2 s=1,2 E.=1
<ul> <li><sup>2.11)</sup> I can demonstrate how k-nearest neighbors algorithms work in Python. My skills in this area <i>before</i> starting the course were</li> </ul>	Very low	66,7%       33,3%       0%       0%       0%         1       2       3       4       5	Very high	n=3 mw=1,3 md=1 s=0,6 E.=1
<ul> <li><sup>2.12)</sup> I can demonstrate how k-nearest neighbors algorithms work in Python.</li> <li>My skills in this area are <i>now</i></li> </ul>	Very low	0% 33,3% 33,3% 33,3% 0%	Very high	n=3 mw=3 md=3 s=1 E.=1
<ul> <li><sup>2.13)</sup> I can demonstrate how support vector machine algorithms work in Python.</li> <li>My skills in this area <i>before</i> starting the course were</li> </ul>	Very low	66,7%       33,3%       0%       0%       0%         1       2       3       4       5	Very high	n=3 mw=1,3 md=1 s=0,6 E.=1
<ul> <li><sup>2.14)</sup> I can demonstrate how support vector machine algorithms work in Python.</li> <li>My skills in this area are <i>now</i></li> </ul>	Very low	0% 33,3% 33,3% 33,3% 0%	Very high	n=3 mw=3 md=3 s=1 E.=1
<sup>2.15)</sup> I can demonstrate how decision tree and random forest algorithms work in Python. My skills in this area <i>before</i> starting the course were	Very low	75%         25%         0%         0%         0%           1         2         3         4         5	Very high	n=4 mw=1,3 md=1 s=0,5
<ul> <li><sup>2.16)</sup> I can demonstrate how decision tree and random forest algorithms work in Python. My skills in this area are <i>now</i></li> </ul>	Very low	0% 25% 50% 25% 0%	Very high	n=4 mw=3 md=3 s=0,8
<ul> <li><sup>2.17)</sup> I can demonstrate how k-means algorithms work in Python.</li> <li>My skills in this area <i>before</i> starting the course were</li> </ul>	Very low	50% 50% 0% 0% 0% 1 2 3 4 5	Very high	n=4 mw=1,5 md=1,5 s=0,6
<ul> <li><sup>2.18)</sup> I can demonstrate how k-means algorithms work in Python.</li> <li>My skills in this area are <i>now</i></li> </ul>	Very low		Very high	n=4 mw=3,3 md=3,5 s=1



<sup>3.3)</sup> The way the course is designed adds to the understanding of the material.	Do not agree at all	0%	0%	0%	25% ⊢	75%	Fully agree	n=4 mw=4,8 md=5 s=0,5
<ul> <li><sup>3.4)</sup> The course has a good mix of knowledge transfer, interactive elements and discussion.</li> </ul>	Do not agree at all	0%	2	 0%  3	 0%  4	100%	Fully agree	n=4 mw=5 md=5 s=0
<sup>3.5)</sup> The instructors are responsive to questions and suggestions.	Do not agree at all	0%	0%	0%	0%	100%	Fully agree	n=4 mw=5 md=5 s=0
<ul> <li><sup>3.6)</sup> The instructors clarify the usability and usefulness of the course content.</li> </ul>	Do not agree at all	0%	2	0%	4	100%	Fully agree	n=4 mw=5 md=5 s=0
<ul> <li><sup>3.7)</sup> The instructors use good teaching materials (e.g., slides, presentations, bibliography, script) to support the learning process.</li> </ul>	Do not agree at all	0%	2	 0%	25%	75%	Fully agree	n=4 mw=4,8 md=5 s=0,5
<sup>3.8)</sup> The instructors have good time management skills.	Do not agree at all	0%	0%	0%	25%	75%	Fully agree	n=4 mw=4,8 md=5 s=0,5
<sup>3.9)</sup> The instructors express themselves clearly and comprehensively.	Do not agree at all	0%	2 0%	 0%  3	25% 	75%	Fully agree	n=4 mw=4,8 md=5 s=0,5
<sup>3.10)</sup> The instructors encourage active participation in the course.	Do not agree at all	0%	2	0%	 0%  4	100%	Fully agree	n=4 mw=5 md=5 s=0
4. Questions about the course (4)								
<sup>4.1)</sup> How much did you learn in this course?	Very little	0%	0%	0%	25%	75%	Very much	n=4 mw=4,8 md=5 s=0,5
<ul> <li><sup>4.2)</sup> How interested were you in the topic <i>before</i> the course began?</li> </ul>	Very little	0%	0%	25% F	25%	50%	Very much	n=4 mw=4,3 md=4,5 s=1

## Profillinie

Teilbereich:

Institut für Medizindidaktik Name der/des Lehrenden: Matthias Carl Laupichler

Titel der Lehrveranstaltung: PI anwesend (Name der Umfrage)

Verwendete Werte in der Profillinie: Mittelwert

#### 1. Questions about the course (1)



#### 2. Evaluation of Learning Objectives

- **Python programming (in general):** My skills in this area *before* starting the course 2.1) wére...
- **Python programming (in general):** My skills in this area are *now*... 2.2)
- 2.3) I can use the Linux terminal/console. My skills in this area *before* starting the course were...
- 2.4) I can use the Linux terminal/console. My skills in this area are *now*...
- 2.5) I can explain gradient descent techniques. My skills in this area before starting the course were...
- 2.6) I can explain gradient descent techniques. My skills in this area are *now*...
- 2.7) I can calculate descriptive statistics like mean, variance, and distribution in Python. My skills in this area *before* starting the course
- I can calculate descriptive statistics like mean, variance, and distribution in Python. 2.8) My skills in this area are now.
- I can explain the concept of Eigenvalues and their importance for PCA. My skills in this area *before* starting the course 2.9)
- 2.10) I can explain the concept of Eigenvalues and their importance for PCA. My skills in this area are *now...*
- I can demonstrate how k-nearest neighbors algorithms work in Python. My skills in this area *before* starting the course
- 2.12) I can demonstrate how k-nearest neighbors algorithms work in Python. My skills in this area are *now*...
- 2.13) I can demonstrate how support vector machine algorithms work in Python. My skills in this area *before* starting the course
- 2.14) I can demonstrate how support vector machine algorithms work in Python. My skills in this area are *now*...
- 2.15) I can demonstrate how decision tree and random forest algorithms work in Python. My skills in this area before starting the course
- 2.16) I can demonstrate how decision tree and random forest algorithms work in Python. My skills in this area are *now*...
- 2.17) I can demonstrate how k-means algorithms work in Python. My skills in this area *before* starting the course
- I can demonstrate how k-means algorithms work in Python. My skills in this area are *now*.
- <sup>2.19)</sup> I can explain the concept of Gaussian mixture models.
- My skills in this area before starting the course 02 01 2024

Very low	Very high	n=4	mw=1,3	md=1,0	s=0,5
Very low	Very high	n=4	mw=2,3	md=2,0	s=0,5
Very low	Very high	n=4	mw=2,5	md=2,5	s=1,3
Very low	Very high	n=4	mw=3,0	md=3,0	s=0,8
Very low	Very high	n=4	mw=1,3	md=1,0	s=0,5
Very low	Very high	n=4	mw=3,3	md=3,5	s=1,0
Very low	Very high	n=4	mw=2,3	md=1,5	s=1,9
Very low	Very high	n=4	mw=3,8	md=4,0	s=1,3
Very low	Very high	n=3	mw=1,7	md=2,0	s=0,6
Very low	Very high	n=3	mw=2,7	md=2,0	s=1,2
Very low	Very high	n=3	mw=1,3	md=1,0	s=0,6
Very low	Very high	n=3	mw=3,0	md=3,0	s=1,0
Very low	Very high	n=3	mw=1,3	md=1,0	s=0,6
Very low	Very high	n=3	mw=3,0	md=3,0	s=1,0
Very low	Very high	n=4	mw=1,3	md=1,0	s=0,5
Very low	Very high	n=4	mw=3,0	md=3,0	s=0,8
Very low	Very high	n=4	mw=1,5	md=1,5	s=0,6
Very low	Very high	n=4	mw=3,3	md=3,5	s=1,0
Very low	Very high	n=4	mw=1,3	md=1,0	s=0,5

2.20) I can explain the concept of Gaussian Very low Very high md=3,0 mw=3,0 s=0,8 n=4 mixture models. My skills in this area are now.. 2.21) I can use PCA for dimensionality reduction in Very high Very low n=4 mw=1,3 md=1,0 s=0,5 Python. My skills in this area *before* starting the course 2.22) I can use PCA for dimensionality reduction in Very low Very high n=4 mw=3.0 md=3.0 s=1.2 Pvthon. My skills in this area are now .. I can explain the concepts of feedforward 2.23) Very high Very low n=4 mw=1,5 md=1,5 s=0,6 neural networks and convolutional neural networks. 2.24) I can explain the concept of feedforward Very low Very high n=4 mw=3.3 md=3.5 s=1.0 neural networks and convolutional neural networks. I can demonstrate the training process of simple neural networks in Python. 2.25) Very high Verv low n=4 mw=1,0 md=1,0 s=0,0 My skills in this area before starting the course <sup>2.26)</sup> I can demonstrate the training process of Very high Very low n=4 mw=2.8 md=2.5 s=1.0 simple neural networks in Python. My skills in this area are *now*... 2.27) I can explain the link between convolutional Very low Very high mw=1.3 md=1.0 neural networks and cross correlation. n=4 s=0.5 My skills in this area before starting the course 2.28) I can explain the link between convolutional Very low Very high mw=3,3 md=3,5 n=4 s=1,7 neural networks and cross correlation. My skills in this area are *now*... 3. Questions about the course (2) <sup>3.1)</sup> Was GitHub a helpful tool for conducting the Not helpful at Very helpful n=4 mw=4.5 md=4.5s=0.6 course? all 3.2) Fully agree The course follows a clear structure. Do not agree at n=4 mw=4.5 md=4.5 s=0.6 all

Fully agree

n=4

n=4

n=4

n=4

n=4

n=4

n=4

n=4

mw=4 8

mw=5,0

mw=5.0

mw=5.0

mw=4.8

mw=5.0

mw

4.8

=4,8

md=5.0

md=5,0

md=5.0

md=5.0

md=5,0

md=5.0

md=5,0

md=5.0

s=0.5

s=0,0

s=0.0

s=0.0

s=0.5

s=0.5

s=0,5

s=0.0

Do not agree at

all

all

all

all

all

all

all

all

- 3.3) The way the course is designed adds to the understanding of the material.
- 3.4) The course has a good mix of knowledge transfer, interactive elements and discussion.
- 3.5) The instructors are responsive to questions and suggestions.
- The instructors clarify the usability and usefulness of the course content. 3.6)
- 3.7) The instructors use good teaching materials (e. g., slides, presentations, bibliography, script) to support the learning process.
- 3.8) The instructors have good time management Do not agree at skills.
- 3.9) The instructors express themselves clearly and Do not agree at comprehensively
- <sup>3.10)</sup> The instructors encourage active participation Do not agree at in the course.

#### 4. Questions about the course (4)

<sup>4.1)</sup> How much did you learn in this course? Very little Very much n=4 mw=4,8 md=5,0 s=0,5 How interested were you in the topic before 4.2) Very little Very much n=4 mw=4,3 md=4,5 s=1,0 the course began?

### Auswertungsteil der offenen Fragen

4. Questions about the course (4)

- <sup>4.3)</sup> What did you like most about the course?
- Die praktischen Übungen und die großartige Unterstützung durch Elena, Moritz und die Tutoren.
- Extremely nice and knowledgeable lecturers and tutors! Nice atmosphere, interesting colleagues... It was awesome!
- mixture of lectures and practical parts

<sup>4.4)</sup> What could be improved about this course?

- Das Niveau der Programmierübungen war sehr hoch. Nichtsdestoweniger habe ich sehr viel aus den praktischen Übungen mitgenommen und finde deren Niveau passend zu den theoretischen Inhalten des Kurses. Die sehr gute tutorielle Betreuung hat in diesem Zusammenhang sehr geholfen. Neben dem geplanten Kurs zu den fortgeschrittenen Methoden des maschinenellen Lernens, wäre eventuell noch ein Kurs sinnvoll, der in die Grundlagen der Programmierung in Python einführt (Funktionsweise und Erstellen von Funktionen, Klassen, mainstatement, etc.).
- For us mere humans way more specific help is needed in the excercise parts, with a lot more comments on the code and (at least at the first few excercises) specific steps or snippets of code to use.
- It's really hard to improve this amazing course. The staff/student ratio is close to 1, which is incredible and fantastic to learn as quickly as possible!
  Ishould have learned more basic python skills before the course and done more of the exercises at home between course days, then

I should have learned more basic python skills before the course and done more of the exercises at home between course days, then I would have benefitted more. So perhaps this could be recommended to future participants even more.

#### 5. Participant statistics

- <sup>5.1)</sup> What is your main field of research?
- Neurobiology
- Neuroscience
- Neurovascular
- Wirtschaftsgeschichte