**Frage 1 - What is your primary Area of Research?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Statusdaten**

|  |  |  |
| --- | --- | --- |
| **von 70 Teilnehmer** | **Anzahl** | **Prozent** |
| Frage gesehen | 70 | 100% |
| Frage beantwortet | 69 | 98.57% |
| Frage nicht beantwortet | 1 | 1.43% |

**Ergebnisse**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Optionen** | **Variable** | **Kodierung** | **Anzahl** | **Häufigkeit nach Teilnehmer** | **Häufigkeit nach Antworten** |
| KET - Elementarteilchenphysik​ | V1 | 1 | 13 | 18.84% | 16.88% |
| KFN - Forschung mit Neutronen | V2 | 1 | 9 | 13.04% | 11.69% |
| KAT - Astroteilchenphysik | V3 | 1 | 10 | 14.49% | 12.99% |
| KfB - Beschleunigerphysik | V4 | 1 | 5 | 7.25% | 6.49% |
| RDS - Rat Deutscher Sternwarten | V5 | 1 | 5 | 7.25% | 6.49% |
| KHuK - Hadronen- und Kernphysik | V6 | 1 | 5 | 7.25% | 6.49% |
| KFS - Forschung mit Synchrotronstrahlung​ | V7 | 1 | 28 | 40.58% | 36.36% |
| KFSI - Forschung mit nuklearen Sonden und Ionenstrahlen ​ | V8 | 1 | 0 | 0% | 0% |
| Other (please specify) | V9 | 1 | 2 | 2.90% | 2.60% |
| **Gesamt** | 77 Antworten | 69 Teilnehmer |

**Frage 1 - What is your primary Area of Research?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Ergebnis-Details für Eingabefeld von Other (please specify)**

|  |  |  |  |
| --- | --- | --- | --- |
| Anzahl Antworten | 2 | Anzahl eindeutige | 2 |

|  |  |  |
| --- | --- | --- |
| **Wert/Antwort** | **Anzahl** | **Häufigkeit** |
| Radio Astronomy | 1 | 50% |
| Astronomy/astrophysics | 1 | 50% |
| **Gesamt** | **2** | **100%** |

**Frage 2 - What is your position?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Statusdaten**

|  |  |  |
| --- | --- | --- |
| **von 70 Teilnehmer** | **Anzahl** | **Prozent** |
| Frage gesehen | 70 | 100% |
| Frage beantwortet | 69 | 98.57% |
| Frage nicht beantwortet | 1 | 1.43% |

**Ergebnisse**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Optionen** | **Variable** | **Kodierung** | **Anzahl** | **Häufigkeit** |
| B.Sc. / M.Sc. Student | V10 | 1 | 0 | 0% |
| PhD Student | V10 | 2 | 5 | 7.25% |
| Postdoc or staff scientist | V10 | 3 | 25 | 36.23% |
| Senior or group leader | V10 | 4 | 36 | 52.17% |
| Other (please specify) | V10 | 5 | 3 | 4.35% |
| **Gesamt** | 69 Antworten | 69 Teilnehmer |

**Frage 2 - What is your position?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Ergebnis-Details für Eingabefeld von Other (please specify)**

|  |  |  |  |
| --- | --- | --- | --- |
| Anzahl Antworten | 3 | Anzahl eindeutige | 2 |

|  |  |  |
| --- | --- | --- |
| **Wert/Antwort** | **Anzahl** | **Häufigkeit** |
| Head of department | 1 | 33.33% |
| Professor | 2 | 66.67% |
| **Gesamt** | **3** | **100%** |

**Frage 3 - What is your overall usage of modern data analysis techniques?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Statusdaten**

|  |  |  |
| --- | --- | --- |
| **von 70 Teilnehmer** | **Anzahl** | **Prozent** |
| Frage gesehen | 70 | 100% |
| Frage beantwortet | 69 | 98.57% |
| Frage nicht beantwortet | 1 | 1.43% |

**Ergebnisse**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Optionen** | **Variable** | **Kodierung** | **Anzahl** | **Häufigkeit** |
| No practical usage so far | V11 | 1 | 5 | 7.25% |
| Applied in some projects | V11 | 2 | 29 | 42.03% |
| Heavy user | V11 | 3 | 9 | 13.04% |
| Method Developer | V11 | 4 | 26 | 37.68% |
| **Gesamt** | 69 Antworten | 69 Teilnehmer |

**Frage 4 - Which techniques are you interested in?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Statusdaten**

|  |  |  |
| --- | --- | --- |
| **von 70 Teilnehmer** | **Anzahl** | **Prozent** |
| Frage gesehen | 70 | 100% |
| Frage beantwortet | 68 | 97.14% |
| Frage nicht beantwortet | 2 | 2.86% |

**Ergebnisse**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Optionen** | **Variable** | **Kodierung** | **Anzahl** | **Häufigkeit nach Teilnehmer** | **Häufigkeit nach Antworten** |
| Classical Machine learning (SVM, BDTs, shallow NN,...) | V12 | 1 | 36 | 52.94% | 16.22% |
| Deep learning (Deep neural networks) | V13 | 1 | 53 | 77.94% | 23.87% |
| Classical statistical methods (Maximum likelihood,...) | V14 | 1 | 44 | 64.71% | 19.82% |
| Sampling methods | V15 | 1 | 17 | 25% | 7.66% |
| Data Base Management | V16 | 1 | 23 | 33.82% | 10.36% |
| Symbolic Methods | V17 | 1 | 6 | 8.82% | 2.70% |
| Bayesian and Frequentist Statistics | V61 | 1 | 34 | 50% | 15.32% |
| Other (please specify) | V84 | 1 | 9 | 13.24% | 4.05% |
| **Gesamt** | 222 Antworten | 68 Teilnehmer |

**Frage 4 - Which techniques are you interested in?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Ergebnis-Details für Eingabefeld von Other (please specify)**

|  |  |  |  |
| --- | --- | --- | --- |
| Anzahl Antworten | 9 | Anzahl eindeutige | 7 |

|  |  |  |
| --- | --- | --- |
| **Wert/Antwort** | **Anzahl** | **Häufigkeit** |
| Depends on the problem | 1 | 11.11% |
| File compression | 1 | 11.11% |
| High quality data processing, pca | 1 | 11.11% |
| Image reconstruction | 1 | 11.11% |
| Information field theory | 3 | 33.33% |
| Tba | 1 | 11.11% |
| Unsupervised training techniques | 1 | 11.11% |
| **Gesamt** | **9** | **100%** |

**Frage 5 - Which tasks are you trying to solve in your research?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Statusdaten**

|  |  |  |
| --- | --- | --- |
| **von 70 Teilnehmer** | **Anzahl** | **Prozent** |
| Frage gesehen | 70 | 100% |
| Frage beantwortet | 69 | 98.57% |
| Frage nicht beantwortet | 1 | 1.43% |

**Ergebnisse**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Optionen** | **Variable** | **Kodierung** | **Anzahl** | **Häufigkeit nach Teilnehmer** | **Häufigkeit nach Antworten** |
| Regression | V74 | 1 | 36 | 52.17% | 16.14% |
| Classification | V75 | 1 | 35 | 50.72% | 15.70% |
| Segmentation | V76 | 1 | 11 | 15.94% | 4.93% |
| Clustering | V77 | 1 | 20 | 28.99% | 8.97% |
| Anomaly Detection | V78 | 1 | 28 | 40.58% | 12.56% |
| Simulation / Building Generative Models | V79 | 1 | 33 | 47.83% | 14.80% |
| Solving Inverse Problems | V80 | 1 | 32 | 46.38% | 14.35% |
| Reinforcement Learning | V81 | 1 | 13 | 18.84% | 5.83% |
| Building Surrogate Models | V82 | 1 | 10 | 14.49% | 4.48% |
| Other - please specify | V83 | 1 | 5 | 7.25% | 2.24% |
| **Gesamt** | 223 Antworten | 69 Teilnehmer |

**Frage 5 - Which tasks are you trying to solve in your research?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Ergebnis-Details für Eingabefeld von Other - please specify**

|  |  |  |  |
| --- | --- | --- | --- |
| Anzahl Antworten | 5 | Anzahl eindeutige | 5 |

|  |  |  |
| --- | --- | --- |
| **Wert/Antwort** | **Anzahl** | **Häufigkeit** |
| High reproducibility in automatic data evaluation | 1 | 20% |
| I do not understand the possible answers | 1 | 20% |
| In combination with other experts | 1 | 20% |
| Optimisation | 1 | 20% |
| Transition dnn to analytic expressions | 1 | 20% |
| **Gesamt** | **5** | **100%** |

**Frage 6 - Which are your primary programming languages?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Statusdaten**

|  |  |  |
| --- | --- | --- |
| **von 70 Teilnehmer** | **Anzahl** | **Prozent** |
| Frage gesehen | 70 | 100% |
| Frage beantwortet | 69 | 98.57% |
| Frage nicht beantwortet | 1 | 1.43% |

**Ergebnisse**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Optionen** | **Variable** | **Kodierung** | **Anzahl** | **Häufigkeit nach Teilnehmer** | **Häufigkeit nach Antworten** |
| Python | V18 | 1 | 58 | 84.06% | 38.41% |
| Perl | V19 | 1 | 2 | 2.90% | 1.32% |
| R | V20 | 1 | 1 | 1.45% | 0.66% |
| C | V21 | 1 | 16 | 23.19% | 10.60% |
| C++/C# | V22 | 1 | 35 | 50.72% | 23.18% |
| Fortran | V23 | 1 | 6 | 8.70% | 3.97% |
| Bash/Shell | V24 | 1 | 7 | 10.14% | 4.64% |
| Julia | V25 | 1 | 2 | 2.90% | 1.32% |
| Mathematica | V26 | 1 | 5 | 7.25% | 3.31% |
| Mathlab | V27 | 1 | 10 | 14.49% | 6.62% |
| Other (please specify) | V28 | 1 | 9 | 13.04% | 5.96% |
| No usage | V69 | 1 | 0 | 0% | 0% |
| **Gesamt** | 151 Antworten | 69 Teilnehmer |

**Frage 6 - Which are your primary programming languages?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Ergebnis-Details für Eingabefeld von Other (please specify)**

|  |  |  |  |
| --- | --- | --- | --- |
| Anzahl Antworten | 9 | Anzahl eindeutige | 8 |

|  |  |  |
| --- | --- | --- |
| **Wert/Antwort** | **Anzahl** | **Häufigkeit** |
| Cuda/opencl | 1 | 11.11% |
| Delphi | 1 | 11.11% |
| Gdl/idl | 1 | 11.11% |
| Idl | 2 | 22.22% |
| Igor | 1 | 11.11% |
| Igorpro, wavemetrics | 1 | 11.11% |
| Maple | 1 | 11.11% |
| Matlab | 1 | 11.11% |
| **Gesamt** | **9** | **100%** |

**Frage 7 - Which Data Analysis Tools are you using?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Statusdaten**

|  |  |  |
| --- | --- | --- |
| **von 70 Teilnehmer** | **Anzahl** | **Prozent** |
| Frage gesehen | 70 | 100% |
| Frage beantwortet | 69 | 98.57% |
| Frage nicht beantwortet | 1 | 1.43% |

**Ergebnisse**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Optionen** | **Variable** | **Kodierung** | **Anzahl** | **Häufigkeit nach Teilnehmer** | **Häufigkeit nach Antworten** |
| Jupyter Notebooks | V29 | 1 | 39 | 56.52% | 44.32% |
| ROOT | V30 | 1 | 15 | 21.74% | 17.05% |
| Other (please specify) | V31 | 1 | 15 | 21.74% | 17.05% |
| No usage | V70 | 1 | 19 | 27.54% | 21.59% |
| **Gesamt** | 88 Antworten | 69 Teilnehmer |

**Frage 7 - Which Data Analysis Tools are you using?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Ergebnis-Details für Eingabefeld von Other (please specify)**

|  |  |  |  |
| --- | --- | --- | --- |
| Anzahl Antworten | 15 | Anzahl eindeutige | 15 |

|  |  |  |
| --- | --- | --- |
| **Wert/Antwort** | **Anzahl** | **Häufigkeit** |
| Idl | 1 | 6.67% |
| Idl (development/testing only) | 1 | 6.67% |
| Igorpro, wavemetrics | 1 | 6.67% |
| In collaboration with others | 1 | 6.67% |
| Ipython | 1 | 6.67% |
| Mantid, igor | 1 | 6.67% |
| Mathematica | 1 | 6.67% |
| Nifty | 1 | 6.67% |
| Other python-based interfaces | 1 | 6.67% |
| Own fortran, c systems | 1 | 6.67% |
| Pandas, numpy | 1 | 6.67% |
| Python scripts | 1 | 6.67% |
| Scripts | 1 | 6.67% |
| Spyder python | 1 | 6.67% |
| Vispa (rwth aachen) | 1 | 6.67% |
| **Gesamt** | **15** | **100%** |

**Frage 8 - Which Data Formats are you using?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Statusdaten**

|  |  |  |
| --- | --- | --- |
| **von 70 Teilnehmer** | **Anzahl** | **Prozent** |
| Frage gesehen | 70 | 100% |
| Frage beantwortet | 69 | 98.57% |
| Frage nicht beantwortet | 1 | 1.43% |

**Ergebnisse**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Optionen** | **Variable** | **Kodierung** | **Anzahl** | **Häufigkeit nach Teilnehmer** | **Häufigkeit nach Antworten** |
| Hdf5 | V32 | 1 | 45 | 65.22% | 20.45% |
| Numpy | V33 | 1 | 39 | 56.52% | 17.73% |
| xml | V34 | 1 | 12 | 17.39% | 5.45% |
| open field specific data format | V35 | 1 | 9 | 13.04% | 4.09% |
| proprietary commercial formats | V36 | 1 | 3 | 4.35% | 1.36% |
| csv | V37 | 1 | 37 | 53.62% | 16.82% |
| fits (flexible image transport system) | V38 | 1 | 11 | 15.94% | 5% |
| panda | V39 | 1 | 20 | 28.99% | 9.09% |
| sql | V40 | 1 | 6 | 8.70% | 2.73% |
| image formats | V41 | 1 | 18 | 26.09% | 8.18% |
| Other (please specify) | V42 | 1 | 18 | 26.09% | 8.18% |
| No usage | V71 | 1 | 2 | 2.90% | 0.91% |
| **Gesamt** | 220 Antworten | 69 Teilnehmer |

**Frage 8 - Which Data Formats are you using?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Ergebnis-Details für Eingabefeld von Other (please specify)**

|  |  |  |  |
| --- | --- | --- | --- |
| Anzahl Antworten | 18 | Anzahl eindeutige | 14 |

|  |  |  |
| --- | --- | --- |
| **Wert/Antwort** | **Anzahl** | **Häufigkeit** |
| .dat | 1 | 5.56% |
| Ascii | 1 | 5.56% |
| Ascii based formats, tiff | 1 | 5.56% |
| Ascii, text, fio, orsopy | 1 | 5.56% |
| Fits | 1 | 5.56% |
| Foo | 1 | 5.56% |
| Log files | 1 | 5.56% |
| My own formats | 1 | 5.56% |
| Nexus | 3 | 16.67% |
| Own ascii human readable | 1 | 5.56% |
| Parquet | 1 | 5.56% |
| Root | 3 | 16.67% |
| Root ttree | 1 | 5.56% |
| Spec-like | 1 | 5.56% |
| **Gesamt** | **18** | **100%** |

**Frage 9 - Which machine learning packages are you using?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Statusdaten**

|  |  |  |
| --- | --- | --- |
| **von 70 Teilnehmer** | **Anzahl** | **Prozent** |
| Frage gesehen | 70 | 100% |
| Frage beantwortet | 69 | 98.57% |
| Frage nicht beantwortet | 1 | 1.43% |

**Ergebnisse**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Optionen** | **Variable** | **Kodierung** | **Anzahl** | **Häufigkeit nach Teilnehmer** | **Häufigkeit nach Antworten** |
| Keras | V43 | 1 | 26 | 37.68% | 18.98% |
| Pytorch | V44 | 1 | 22 | 31.88% | 16.06% |
| TensorFlow | V45 | 1 | 30 | 43.48% | 21.90% |
| TMVA | V46 | 1 | 5 | 7.25% | 3.65% |
| SciKit Learn | V47 | 1 | 25 | 36.23% | 18.25% |
| Mathematica | V48 | 1 | 4 | 5.80% | 2.92% |
| R | V49 | 1 | 0 | 0% | 0% |
| Other (please specify) | V50 | 1 | 5 | 7.25% | 3.65% |
| No usage | V72 | 1 | 20 | 28.99% | 14.60% |
| **Gesamt** | 137 Antworten | 69 Teilnehmer |

**Frage 9 - Which machine learning packages are you using?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Ergebnis-Details für Eingabefeld von Other (please specify)**

|  |  |  |  |
| --- | --- | --- | --- |
| Anzahl Antworten | 5 | Anzahl eindeutige | 5 |

|  |  |  |
| --- | --- | --- |
| **Wert/Antwort** | **Anzahl** | **Häufigkeit** |
| Dlib,fastbdt,catboost,xgboost | 1 | 20% |
| In collaboration with experts | 1 | 20% |
| Jax | 1 | 20% |
| Pytorch geometric | 1 | 20% |
| Pytorch geometric (and few other pytorch based packages) | 1 | 20% |
| **Gesamt** | **5** | **100%** |

**Frage 10 - For which hardware platforms do you program?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Statusdaten**

|  |  |  |
| --- | --- | --- |
| **von 70 Teilnehmer** | **Anzahl** | **Prozent** |
| Frage gesehen | 70 | 100% |
| Frage beantwortet | 69 | 98.57% |
| Frage nicht beantwortet | 1 | 1.43% |

**Ergebnisse**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Optionen** | **Variable** | **Kodierung** | **Anzahl** | **Häufigkeit nach Teilnehmer** | **Häufigkeit nach Antworten** |
| CPU | V51 | 1 | 43 | 62.32% | 31.39% |
| CPU with multithreading | V52 | 1 | 43 | 62.32% | 31.39% |
| GPU | V53 | 1 | 34 | 49.28% | 24.82% |
| TPU | V54 | 1 | 1 | 1.45% | 0.73% |
| FPGA | V55 | 1 | 7 | 10.14% | 5.11% |
| ASICS | V56 | 1 | 1 | 1.45% | 0.73% |
| Other (please specify) | V57 | 1 | 3 | 4.35% | 2.19% |
| None | V73 | 1 | 5 | 7.25% | 3.65% |
| **Gesamt** | 137 Antworten | 69 Teilnehmer |

**Frage 10 - For which hardware platforms do you program?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Ergebnis-Details für Eingabefeld von Other (please specify)**

|  |  |  |  |
| --- | --- | --- | --- |
| Anzahl Antworten | 3 | Anzahl eindeutige | 3 |

|  |  |  |
| --- | --- | --- |
| **Wert/Antwort** | **Anzahl** | **Häufigkeit** |
| Collaboration with others | 1 | 33.33% |
| Esp32 (programming by arduino tools) | 1 | 33.33% |
| Independent | 1 | 33.33% |
| **Gesamt** | **3** | **100%** |

**Frage 11 - Are there any legal/support aspects on which you need centralized guidance, for example licensing and distribution, open source, eccess to computing infrastructure, repositories, legacy code usage?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Statusdaten**

|  |  |  |
| --- | --- | --- |
| **von 70 Teilnehmer** | **Anzahl** | **Prozent** |
| Frage gesehen | 70 | 100% |
| Frage beantwortet | 26 | 37.14% |
| Frage nicht beantwortet | 44 | 62.86% |

**Ergebnis-Details für Are there any legal/support aspects on which you need centralized guidance, for example licensing and distribution, open source, eccess to computing infrastructure, repositories, legacy code usage?**

|  |  |  |  |
| --- | --- | --- | --- |
| Anzahl Antworten | 26 | Anzahl eindeutige | 18 |

|  |  |  |
| --- | --- | --- |
| **Wert/Antwort** | **Anzahl** | **Häufigkeit** |
| No | 8 | 30.77% |
| Not specifically | 1 | 3.85% |
| -- | 1 | 3.85% |
| no | 2 | 7.69% |
| Not to be bothered with mandatory questions to which one does not want to answer. Or with other words: Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum. | 1 | 3.85% |
| licensing and distribution would be interesting. | 1 | 3.85% |
| Yes | 1 | 3.85% |
| integration in collaboration software | 1 | 3.85% |
| Licensing | 1 | 3.85% |
| a general and a specific guideline about licensing, intellectual property and possible reuse conditions and restrictions would be more than great | 1 | 3.85% |
| All of the topics mentioned above are areas where researchers don't really know how to work/proceed. I think guidance in such areas will be helpful to most. | 1 | 3.85% |
| Maybe | 1 | 3.85% |
| The archiving of network topologies and underlying experimental data from published papers are currently isolated solutions. A general approach with archiving possibilities should be a goal for the future. | 1 | 3.85% |
| Mostly issues arise due to DS-GVO and hosting of data, which leads us to leave also the remaining non-open source software by companies due to non-European cloud data storage. | 1 | 3.85% |
| Access to computing infrastructure, open source | 1 | 3.85% |
| access to GPU Cluster | 1 | 3.85% |
| we have industrial research so confidentiality is to be guaranteed | 1 | 3.85% |
| no (we use gitlab at the university and nodelocked licenses, which we generate ourselves) | 1 | 3.85% |
| **Gesamt** | **26** | **100%** |

**Frage 12 - Are you active in the NFDI? If yes, in which consortium?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Statusdaten**

|  |  |  |
| --- | --- | --- |
| **von 70 Teilnehmer** | **Anzahl** | **Prozent** |
| Frage gesehen | 70 | 100% |
| Frage beantwortet | 69 | 98.57% |
| Frage nicht beantwortet | 1 | 1.43% |

**Ergebnisse**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Optionen** | **Variable** | **Kodierung** | **Anzahl** | **Häufigkeit** |
| Yes, in: | V59 | 1 | 26 | 37.68% |
| No | V59 | 2 | 43 | 62.32% |
| **Gesamt** | 69 Antworten | 69 Teilnehmer |

**Frage 12 - Are you active in the NFDI? If yes, in which consortium?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Ergebnis-Details für Eingabefeld von Yes, in:**

|  |  |  |  |
| --- | --- | --- | --- |
| Anzahl Antworten | 26 | Anzahl eindeutige | 5 |

|  |  |  |
| --- | --- | --- |
| **Wert/Antwort** | **Anzahl** | **Häufigkeit** |
| Daphne | 7 | 26.92% |
| Daphne4nfdi | 8 | 30.77% |
| Nfdi4phys | 1 | 3.85% |
| Punch | 5 | 19.23% |
| Punch4nfdi | 5 | 19.23% |
| **Gesamt** | **26** | **100%** |

**Frage 13 - Are you part of a project submitted to the current call on software and algorithms in ErUM-Data? If yes, please mention the project/topic.**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Statusdaten**

|  |  |  |
| --- | --- | --- |
| **von 70 Teilnehmer** | **Anzahl** | **Prozent** |
| Frage gesehen | 70 | 100% |
| Frage beantwortet | 66 | 94.29% |
| Frage nicht beantwortet | 4 | 5.71% |

**Ergebnisse**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Optionen** | **Variable** | **Kodierung** | **Anzahl** | **Häufigkeit** |
| Yes, in: | V60 | 1 | 24 | 36.36% |
| No | V60 | 2 | 42 | 63.64% |
| **Gesamt** | 66 Antworten | 66 Teilnehmer |

**Frage 13 - Are you part of a project submitted to the current call on software and algorithms in ErUM-Data? If yes, please mention the project/topic.**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Ergebnis-Details für Eingabefeld von Yes, in:**

|  |  |  |  |
| --- | --- | --- | --- |
| Anzahl Antworten | 24 | Anzahl eindeutige | 15 |

|  |  |  |
| --- | --- | --- |
| **Wert/Antwort** | **Anzahl** | **Häufigkeit** |
| 1) Information Field Theory (Vollantrag)
2) COIN (not funded) | 1 | 4.17% |
| MANTA | 1 | 4.17% |
| Information Field Theory | 2 | 8.33% |
| Digum | 1 | 4.17% |
| AI-X-RAY | 2 | 8.33% |
| KISS | 2 | 8.33% |
| aNNomalie | 1 | 4.17% |
| don't remember name | 1 | 4.17% |
| AI-Xray | 2 | 8.33% |
| EvalSpek-ML, AI-X-Ray | 1 | 4.17% |
| ML-KORR | 1 | 4.17% |
| Several | 1 | 4.17% |
| aNNomalie (Datamining und Anomaliedetektion in Echtzeit auf detektornahen
eingebetteten Prozessoren) | 1 | 4.17% |
| AI-X-Ray | 2 | 8.33% |
| AI-X-Ray project | 1 | 4.17% |
| **Gesamt** | **20** | **83.33%** |

**Frage 14 - How interested would you be in a Wiki-Page collecting results and examples of big data analytics topics by German researchers?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Statusdaten**

|  |  |  |
| --- | --- | --- |
| **von 70 Teilnehmer** | **Anzahl** | **Prozent** |
| Frage gesehen | 70 | 100% |
| Frage beantwortet | 69 | 98.57% |
| Frage nicht beantwortet | 1 | 1.43% |

**Frage 14 - How interested would you be in a Wiki-Page collecting results and examples of big data analytics topics by German researchers?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Ergebnis-Details für How interested would you be in a Wiki-Page collecting results and examples of big data analytics topics by German researchers?**

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | V68 | Anzahl der Antworten | 69 |
| Promotoren | 33.33 |
| Kritiker | 36.23 |
| Net Promoter Score | -2.90 |

|  |  |  |
| --- | --- | --- |
| **Wert/Antwort** | **Anzahl** | **Häufigkeit** |
| 0 | 3 | 4.35% |
| 1 | 2 | 2.90% |
| 2 | 2 | 2.90% |
| 3 | 1 | 1.45% |
| 4 | 3 | 4.35% |
| 5 | 7 | 10.14% |
| 6 | 7 | 10.14% |
| 7 | 11 | 15.94% |
| 8 | 10 | 14.49% |
| 9 | 5 | 7.25% |
| 10 | 18 | 26.09% |
| **Gesamt** | **69** | **98.57%** |

**Frage 15 - How interested would you be in a match-making page with other researchers in Germany?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Statusdaten**

|  |  |  |
| --- | --- | --- |
| **von 70 Teilnehmer** | **Anzahl** | **Prozent** |
| Frage gesehen | 70 | 100% |
| Frage beantwortet | 69 | 98.57% |
| Frage nicht beantwortet | 1 | 1.43% |

**Frage 15 - How interested would you be in a match-making page with other researchers in Germany?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Ergebnis-Details für How interested would you be in a match-making page with other researchers in Germany?**

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | V62 | Anzahl der Antworten | 69 |
| Promotoren | 24.64 |
| Kritiker | 46.38 |
| Net Promoter Score | -21.74 |

|  |  |  |
| --- | --- | --- |
| **Wert/Antwort** | **Anzahl** | **Häufigkeit** |
| 0 | 1 | 1.45% |
| 1 | 2 | 2.90% |
| 2 | 6 | 8.70% |
| 3 | 5 | 7.25% |
| 4 | 3 | 4.35% |
| 5 | 9 | 13.04% |
| 6 | 6 | 8.70% |
| 7 | 10 | 14.49% |
| 8 | 10 | 14.49% |
| 9 | 5 | 7.25% |
| 10 | 12 | 17.39% |
| **Gesamt** | **69** | **98.57%** |

**Frage 16 - How interested would you be in cross-disciplinary online seminars?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Statusdaten**

|  |  |  |
| --- | --- | --- |
| **von 70 Teilnehmer** | **Anzahl** | **Prozent** |
| Frage gesehen | 70 | 100% |
| Frage beantwortet | 69 | 98.57% |
| Frage nicht beantwortet | 1 | 1.43% |

**Frage 16 - How interested would you be in cross-disciplinary online seminars?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Ergebnis-Details für How interested would you be in cross-disciplinary online seminars?**

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | V63 | Anzahl der Antworten | 69 |
| Promotoren | 21.74 |
| Kritiker | 34.78 |
| Net Promoter Score | -13.04 |

|  |  |  |
| --- | --- | --- |
| **Wert/Antwort** | **Anzahl** | **Häufigkeit** |
| 0 | 1 | 1.45% |
| 1 | 0 | 0% |
| 2 | 3 | 4.35% |
| 3 | 3 | 4.35% |
| 4 | 3 | 4.35% |
| 5 | 11 | 15.94% |
| 6 | 3 | 4.35% |
| 7 | 18 | 26.09% |
| 8 | 12 | 17.39% |
| 9 | 4 | 5.80% |
| 10 | 11 | 15.94% |
| **Gesamt** | **69** | **98.57%** |

**Frage 17 - How interested would you be in in-person workshops?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Statusdaten**

|  |  |  |
| --- | --- | --- |
| **von 70 Teilnehmer** | **Anzahl** | **Prozent** |
| Frage gesehen | 70 | 100% |
| Frage beantwortet | 69 | 98.57% |
| Frage nicht beantwortet | 1 | 1.43% |

**Frage 17 - How interested would you be in in-person workshops?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Ergebnis-Details für How interested would you be in in-person workshops?**

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | V64 | Anzahl der Antworten | 69 |
| Promotoren | 15.94 |
| Kritiker | 47.83 |
| Net Promoter Score | -31.88 |

|  |  |  |
| --- | --- | --- |
| **Wert/Antwort** | **Anzahl** | **Häufigkeit** |
| 0 | 0 | 0% |
| 1 | 1 | 1.45% |
| 2 | 6 | 8.70% |
| 3 | 5 | 7.25% |
| 4 | 3 | 4.35% |
| 5 | 10 | 14.49% |
| 6 | 8 | 11.59% |
| 7 | 11 | 15.94% |
| 8 | 14 | 20.29% |
| 9 | 4 | 5.80% |
| 10 | 7 | 10.14% |
| **Gesamt** | **69** | **98.57%** |

**Frage 18 - Do you have comments or other suggestions for activities?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Statusdaten**

|  |  |  |
| --- | --- | --- |
| **von 70 Teilnehmer** | **Anzahl** | **Prozent** |
| Frage gesehen | 70 | 100% |
| Frage beantwortet | 15 | 21.43% |
| Frage nicht beantwortet | 55 | 78.57% |

**Ergebnis-Details für Do you have comments or other suggestions for activities?**

|  |  |  |  |
| --- | --- | --- | --- |
| Anzahl Antworten | 15 | Anzahl eindeutige | 14 |

|  |  |  |
| --- | --- | --- |
| **Wert/Antwort** | **Anzahl** | **Häufigkeit** |
| We need to define major research directions with the highest potential for progress and discovery: short term - medium term - long term. For this we need workshops with leading active researchers in the various ErUM fields. | 1 | 6.67% |
| No | 2 | 13.33% |
| no | 1 | 6.67% |
| I like the idea of cross-disciplinary workshops, but I do not like the idea of further on-line activities. | 1 | 6.67% |
| Worldwide collaborative online workshops would be nice! | 1 | 6.67% |
| No need to limit to only German researchers - we interact internationally. | 1 | 6.67% |
| regular training/education sessions about digital and data literacy for non experts in software and computing | 1 | 6.67% |
| Consulting with industry professionals on the current status outside of academia (e.g. invite a rep from snowflake, azure, nvidia, etc.) | 1 | 6.67% |
| Materials for asynchronous consumption are a lot easier to fit in a busy schedule! | 1 | 6.67% |
| 1) dedicated schools on tasks and techniques (see basically all options of questions "Which tasks are you trying to solve in your research?" and "Which techniques are you interested in?" ) for PhD Students and PostDocs that additionally focus on code quality and sustainable software development in science and that adress the reusabilty of code developed e.g. in a thesis project.

2) similar to the mentioned wiki-page a database of various data-collections that can be used for ML-Purposes would be interesting. I think there are enough options around to publish such data collections, (data catalogs at faciclies, zenodo, attachments to scientific publications, ...) but it would be good to have a central place where one could find refrences to datasets that are of relevance for DIG-UM. | 1 | 6.67% |
| We need improvement in the basic data evaluation especially in XAFS, all available solution are not state of art. | 1 | 6.67% |
| Bring together experts and applicants | 1 | 6.67% |
| Frequent seminars or workshops are a question of available time. However, one big workshop per year, bringing together all interested people and mayba also cross-disciplinary , would in my mind be a good idea. | 1 | 6.67% |
| Networking outside of Germany is important - our research field is international not domestic | 1 | 6.67% |
| **Gesamt** | **15** | **100%** |

**Frage 19 - What are the key problems concerning algorithms for your research and which methods are important?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Statusdaten**

|  |  |  |
| --- | --- | --- |
| **von 70 Teilnehmer** | **Anzahl** | **Prozent** |
| Frage gesehen | 70 | 100% |
| Frage beantwortet | 27 | 38.57% |
| Frage nicht beantwortet | 43 | 61.43% |

**Ergebnis-Details für What are the key problems concerning algorithms for your research and which methods are important?**

|  |  |  |  |
| --- | --- | --- | --- |
| Anzahl Antworten | 27 | Anzahl eindeutige | 27 |

|  |  |  |
| --- | --- | --- |
| **Wert/Antwort** | **Anzahl** | **Häufigkeit** |
| I want to directly connect the three pillars in physics: experiments - mathematics - machine learning. So far, there is only slow progress in the directional work from machine learning to analytic expressions. We need physics laws in terms of mathematical expressions resulting from machine learning methods. | 1 | 3.70% |
| Selection of best method / approach is most difficult! Problems arising are very diverse and often it turns out that ML is doing really badly although it was expected to perform ok. Perhaps cause is „not quite the right method is used“… would be good to understand better how to categorize a problem in detail | 1 | 3.70% |
| Data size and transfer, Complex model building/fitting, Large databases. | 1 | 3.70% |
| ... | 1 | 3.70% |
| Parallelization of large inference problems (N ~ 10^11 degrees of freedom)
Important are methods that scale not worse than N log N . | 1 | 3.70% |
| Classification and reconstruction or air showers in Cherenkov telescopes
Classification of astrophysical sources | 1 | 3.70% |
| In-memory file-less processing, robustness, interfacing to instrumentation, common analysis formats. | 1 | 3.70% |
| estimation of uncertainties, resource optimization of networks | 1 | 3.70% |
| missing standardisation in data formats, little collaboration between topically adjacent fields | 1 | 3.70% |
| I am primarily a researcher in Astroparticle Physics, using deep learning methods on graphs. Most of our works with deep learning are highly iterative and the knowledge gain happens through this. However, it is a slow process. In such a situation it would be great to have regular discussion with ML experts from Computer Science to learn tricks of the trade (most of which are not reported in the research papers). | 1 | 3.70% |
| Lack of regularly adapted guidances and assistance in a rapidly changing field. | 1 | 3.70% |
| Bridging the domain gap between simulations and real experimental data. | 1 | 3.70% |
| differentiable computing, interpretable NNs, | 1 | 3.70% |
| Low latency and throughput, HLS for FPGA | 1 | 3.70% |
| At present the overhead to use infrastructure and algorithms is an obstacle, especially for new-comers, also due different cultures for IT at universities, Helmholtz centers, etc. In part this can be mitigated by using docker or singularity environments, but the workflows are not all well established or transparent or different at different affiliations. | 1 | 3.70% |
| Scalability of algorithms to vast data sets, easiness of use. | 1 | 3.70% |
| Absence of common conventions for metadata storage | 1 | 3.70% |
| combining systematic uncertainties and ML | 1 | 3.70% |
| Machine learning with real time aspects while learning | 1 | 3.70% |
| Large annotated data sets which are free and open for training and testing neural networks. | 1 | 3.70% |
| "normalizing flows" definetly gains importances but implemenations remain difficult. | 1 | 3.70% |
| is, that most basic data evaluation in XAFS (see background substaction) does not fulfill the requirements of "machine learning tool". See crap in -> crap out | 1 | 3.70% |
| the connection to experts who apply machine learning and other tools | 1 | 3.70% |
| Existing algorithms are not sufficient for present problems | 1 | 3.70% |
| A key problem is the missing long term funding for hiring data scientists. A lot of funding schemes have been set up for project funding, but in fact establishing big data analysis and AI based concepts require a long term commitment. The experts in this field are highly requested, also by industry and the conditions in terms of salary and job security in science, especially if project funded, cannot compete with what is offered in industry. | 1 | 3.70% |
| Realtime aspects (time limitation for a neural network decision). | 1 | 3.70% |
| Framing the problems we have - and the data itself - into a form which is useable by the various AI data analysis packages is by far the greatest challenge. | 1 | 3.70% |
| **Gesamt** | **27** | **100%** |

**Frage 20 - Do you have any other questions/comments?**

**Stand: 14. Juni 2023, 15:51 Uhr, Umfrage "Big-Data-Analytic-Kopie"**

*Anzahl ausgewerteter Teilnehmer: 70 (alle Teilnehmer)*

*Erstellt mit LamaPoll | https://www.lamapoll.de*

**Statusdaten**

|  |  |  |
| --- | --- | --- |
| **von 70 Teilnehmer** | **Anzahl** | **Prozent** |
| Frage gesehen | 70 | 100% |
| Frage beantwortet | 9 | 12.86% |
| Frage nicht beantwortet | 61 | 87.14% |

**Ergebnis-Details für Do you have any other questions/comments?**

|  |  |  |  |
| --- | --- | --- | --- |
| Anzahl Antworten | 9 | Anzahl eindeutige | 8 |

|  |  |  |
| --- | --- | --- |
| **Wert/Antwort** | **Anzahl** | **Häufigkeit** |
| Thank you for the very nice survey. Looking very much forward to see the results: Martin (Erdmann) | 1 | 11.11% |
| No | 2 | 22.22% |
| ... | 1 | 11.11% |
| The understanding of information theory needs to be improved. People know how to fit neural network models to data often without having a clear understanding of the underlying probabilistic logic. | 1 | 11.11% |
| Are there ideas to standadize data-formats for labled data in the DIG-UM comunity that can be used for model training? | 1 | 11.11% |
| Many thanks for all your efforts! | 1 | 11.11% |
| I did not understand the possible answers to the question: "Which tasks are you trying to solve in your research?"

actually in my research I try to solve the atomic structure of mater by x-ray scattering and the things listed might be tools to do so, but not the problem to be solved | 1 | 11.11% |
| AI is effectively an interpolation mechanism. How it performs and whether it can be used outside of the training data set (extrapolation) is unknown but very important when one is doing new science rather than repeating old techniques. | 1 | 11.11% |
| **Gesamt** | **9** | **100%** |