

# Geplantes Angebot für Vertiefungen Data Science / Planned specialisation programme Data Science

|               | SoSe 25                                       | WiSe 25/26                                | SoSe 26                                                | WiSe 26/27                                | SoSe 27                              |
|---------------|-----------------------------------------------|-------------------------------------------|--------------------------------------------------------|-------------------------------------------|--------------------------------------|
| Analysis      | PDE II/2 Data Assimilation for Fluid Dynamics | Partial Differential Equations 1          |                                                        | Partial Differential Equations 1          |                                      |
| Analysis      | Machine Learning for Fluid Dynamics           |                                           |                                                        |                                           |                                      |
|               |                                               |                                           |                                                        |                                           |                                      |
| Numerik       |                                               | Numerics for PDEs with Uncertain Data     | Efficient Methods for Data Assimilation                |                                           |                                      |
| Num. Analysis |                                               |                                           | Scalable Linear Solvers for Data Science               |                                           |                                      |
|               |                                               |                                           |                                                        |                                           |                                      |
| Optimierung   | Discrete Optimization                         | Optimization Methods for Machine Learning | Discrete Optimization                                  | Optimization Methods for Machine Learning | Discrete Optimization                |
| Optimization  |                                               | Non linear Optimization                   |                                                        | Non linear Optimization                   |                                      |
|               |                                               |                                           | First-order methods for optimization in data analytics |                                           | Optimization Methods in Data Science |
|               |                                               |                                           |                                                        |                                           |                                      |
| Stochastik    | Mathematical Statistics                       | Statistical Theory of Deep Learning       |                                                        | Mathematical Statistics                   | Statistical Theory of Deep Learning  |
| Stochastics   |                                               |                                           |                                                        |                                           |                                      |

in Optimierung und Stochastik ist keine Reihenfolge einzuhalten, beliebiger Einstieg / in Optimization and Stochastics you can start any time

in Numerik muss erst Numerics for PDEs with Uncertain Data und im darauffolgenden Semester die anderen Vorlesungen gehört werden / for Numerical Analysis it is mandatory to start with Numerics for PDEs with Uncertain Data

in Analysis muss erst PDE I gehört werden / in Analysis it is mandatory to start with PDE I