Interdisciplinary Project
- Creating a Business Intelligence Software

Our area of expertise:
We are a team of forward-thinking experts turning the most valuable asset of our entire organization - data - into business solutions. Paving the way for digital transformation of Volkswagen Group and ensuring the future of our business, we develop sustainable data driven products and unique customer experience. Combining innovative technologies, curious mindsets and unparalleled expertise in research, our work spans across all of the Volkswagen Group’s brands. Our key areas of research include Advanced Analytics, Natural Language Processing, Deep Learning, Quantum Computing and AI Research. Furthermore, our team works in close collaboration with universities and public institutions, and the most innovative technology vendors and startups.

We are offering:
- Insights into innovative and future-oriented technologies and services of tomorrow’s automotive industry
- Agile software development as well as coaching and mentoring during the IDP
- Fair remuneration for the statutory minimum wage based on a 35h/week
- Relaxed and open start up atmosphere
- Access to a unique network consisting of experts from various disciplines
**Project background:**
Due to an increasing number and complexity of projects and technologies within the Volkswagen Data:Lab and advanced requirements of the Volkswagen Group board the need of a management, portfolio and analytics tool has arose. Within previous IDPs several modules have been developed. These five modules are all part of our business intelligence software that allows us to centrally store all information and analyze them. We are now capable of handling projects, technologies and absences within one tool. Due to the increasing number of modules, it will be your task to restructure the BI tool in order to reduce complexity and allow scaling. Furthermore, the tool will undergo a complete redesign to improve user experience and usability. For the implementation of this uniform and holistic tool we plan to work in a team with students that fulfill the following skillsets (you only have to fit into one role):

**UI / UX Designer**
- Advanced skills in JavaScript and frameworks/libraries (especially Angular6 and Kendo UI)
- Experience in designing and creating user-friendly and responsive front-ends

**API Developer**
- Advanced skills in Rest API and Python (Flask)
- Experience in REST API design/integration
- Good programming and communication skills
- Fluent English, German is not mandatory but highly welcome
- Enrolled in a master’s degree from TUM Informatics

**Database Engineer**
- Advanced skills in MySQL
- Experience in creating and implementing databases

**Project procedure:**
Project should occur as an agile application development based on Scrum, which is an iterative and incremental agile software development framework for managing product development. It defines a flexible, holistic product development strategy where a development team works as a unit to reach common goals, challenges assumptions of the traditional, sequential approach to product development, and enables teams to self-organize by encouraging physical co-location or close online collaboration of all team members, as well as daily face-to-face communication among all team members and disciplines involved. You will be awarded 10 ECTS for the above-mentioned development. Further, the development and results shall be documented in a written report and presented to the supervisors.
In accordance with the practical assignment, you participate in the course “Project Management” (WI000264, 6 ECTS), offered by the Operations Management chair. This course covers aspects such as Project Stakeholder and Project Organization, Planning Project Deliverables and Cost, Project Scheduling with Resource Constraints, Project Controlling, Project Valuation, Project Portfolio Planning and Project Planning Considering Risk. These academic insights will be needed in order to successfully work on this IDP. You must pass an exam on the course’s topics at the end of the interdisciplinary project.

**Project timeline:**
The following timeline is meant to provide a guideline for keeping track of the projects progress (this can of course change during the project):

- **Phase 1 (CW 33):**
  Get familiar with Volkswagen Data:Lab, internal processes, IT infrastructure, relevant data and requirements
- **Phase 2.1 (CW 34-38):** Define a conceptual design for the front-end
- **Phase 2.2 (CW 34-38):** Define a conceptual design for the back-end
- **Phase 2.3 (CW 34-38):** Define a conceptual design for the API
- **Phase 3 (CW 39-44):** Creation and implementation of the conceptual design as defined in Phase 2
- **Phase 4 (CW 45-46):** Testing of the developed tool
- **Phase 5 (CW 46):** Documentation of the changes for knowledge transfer
- **Phase 6 (CW 46-47):** Final Presentation of the tool and preparation for the exam “Project Management”

**Contact:**
Please submit informative documents (CV, transcript of records, certificates, …) about yourself to the following contact person (please send to both persons):

- Christian Pletl    christian.pletl@volkswagen.de
- Robert Willi      robert.willi@volkswagen.de