Multi-Modal Mobility Demand

Project Management Plan
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1 Planning Basis

1.1 Scope

The purpose of the project was to investigate develop novel methods for the generation of synthetic demand data for multi-modal urban mobility systems, specifically taxi and bike share systems in the NYC Metropolitan area.

1.2 Milestones

The key milestones for the project, identified through discussions with the stakeholders, are as follows:

Milestone	Description
Literature Review Completed	The literature review section of the paper's introduction has been completed.
Exploratory Data Analysis	Data for taxi, bike, and weather have been explored and critical features have been selected.
Prototype Models Trained	Prototypes for a feedforward regression network and a conditional GAN network have been trained on the data.

2 Project Plan

2.1 Management Style

The project was managed using an Agile approach. Sprints consisted of one- to two-week periods. User stories and tasks were managed with the online Agile platform Jira. Daily standup meetings were held with the two teammates, and weekly review meetings were held with at least one stakeholder present. Time constraints in the project due to the goals of the scope were such that a focus on heavy documentation was not deemed an optimal strategy, therefore the development of prototypes and informational deliverables for the stakeholder were given priority.

2.2 Dependencies

Several key dependencies were identified which could impact the progress of the project. These dependencies are outlined in the table below.

Activity	Depends on	Dependency Type
Build Prototype Models	Exploratory Data Analysis	Start-to-start
Obtain Computing Infrastructure	Build Prototype Models	Finish-to-start
Train Models	Obtain Computing Infrastructure	Finish-to-Start

It was necessary to understand the data before constructing the prototypes of the model architectures, therefore the exploratory data analysis was started before beginning prototype development.
The allocation of high performance computing infrastructure was done via a request to the High Performance Computing center on TU/e campus. This request required an estimate of

required computing power, therefore it was necessary to build the prototype models before submitting the request.

Model training on a lengthy span depended on computing infrastructure, therefore it was necessary to obtain the infrastructure allocation before training the models.

3   Risk Management

3.1 Risk Log

Identify risks to the project and list them here. Include the impact, response, level of risk and who on the team will own the response if the issue in fact arises.

ID	Risk	Impact	Response	Risk Level	Risk Owner
1	Data availability	Scope	Adjust mobility targets	High	Yuri Hudak
2	Computing Infrastructure	Validation	Develop alternative sources of computing power	Medium	Anup Padaki