

## Master project in the ASPARi research unit

Company and Location	The student will initially be based at the University of Twente and then at a company within the ASPARi contractor network
Type of project	Master project
Title of topic	<b>Development of Pavement Performance Prediction Models for Asphalt Pavements Using Construction Data and Multiple Modelling Techniques</b>
Project background / context	<p>Pavement performance prediction models (PPPM) are a core component of any pavement management system (PMS), as they allow a rational comparison of alternative maintenance and rehabilitation (M&amp;R) plans and thereby investment strategies at the network level. Furthermore, pavement performance influences the fuel efficiency of vehicles due to the so called pavement-related rolling resistance mechanisms, which can have significant economic and environmental implications on vehicle operating costs and emissions, particularly in heavily trafficked roads.</p> <p>The way pavement deteriorates, and the type and severity of distresses observed throughout its life cycle are determined by multiple factors, such as the type of pavement materials, layers structure, thickness and underlying subgrade quality, environmental, traffic loading and climatic conditions, age as well as the construction quality. While the first factors have, to some extent, been considered in the development of the existing PPPM, the later have not been object of the same level of attention.</p>
Research method	<p>Quantitative research methods:</p> <ul style="list-style-type: none"> <li>• Data processing and analysis;</li> <li>• Statistical analysis (descriptive, explanatory and predictive);</li> <li>• Mathematical models development.</li> </ul>
Contact(s) at the company	A company is being sought for collaboration on this project.
Start date	From April 2018 onwards
Contact at the UT	Seirgei Miller <a href="mailto:s.r.miller@utwente.nl">s.r.miller@utwente.nl</a> João Santos <a href="mailto:j.m.oliveiradossantos@utwente.nl">j.m.oliveiradossantos@utwente.nl</a>