Projects
  1. **Data analytics and modeling for IoT lighting**
  2. **Data analytics and control in connected lighting systems**

These two projects deal with the role smart connected lighting systems play in the Internet of Things (IoT) world. The data produced from sensors and luminaires in a lighting system can be used to generate insights into lighting energy consumption, monitor health of the lighting system, and perform asset management.

The first project deals with data modelling of the different lighting data elements in an indoor lighting system, with the view that the resulting data will be used for lighting control, data analytics as well as for third-party data consumers. The developed data models should enable ease of fusing multiple data modalities for advanced analytics. The goal will be to apply the developed data models in a prototype analytics application using lighting data.

The second project deals with modelling and analytics for lighting energy and occupancy data. The goal is to be able to develop monitoring strategies and make predictions on key metrics so that reactive/preventive action may be taken when/before an event occurs. Based on the analysis and predictions, control actions may also be taken to optimize the performance of the lighting system. The goal of the project will be develop necessary monitoring strategies and algorithms for lighting data analytics, and develop lighting system optimization strategies.

Expected background (via graduate course work, research project etc.)
  • Sensors and signal processing
  • Algorithm development
  • Statistical techniques and data analysis
  • Data analytics visualization tools (e.g. Microsoft BI, Tableau)
  • Strong programming skills (e.g. Python and being able to work with csv files and SQL databases)
  • Familiarity with web services API (e.g. SOAP, REST, JSON)
  • Familiarity with smart lighting systems is a plus
  • Strong communication (written and verbal) skills in English

To apply, send a detailed curriculum vita with list of 2-3 references, preferred joining date and period of availability, details of graduate courses and research projects, along with technical reports/publications if applicable.

Project duration: 8-12 months (leading to a thesis, in case of Masters' thesis students)

Project location: Philips Lighting, High Tech Campus, Eindhoven, The Netherlands

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