Rohit Tripathy

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Summary

I am a graduate student at the ***Predictive Science Lab*** at **Purdue University**. My research deals with high dimensional Uncertainty Quantification. Learning high dimensional functions is a problem of massive importance in various areas of engineering (flow in porous media, contact mechanics in granular crystals, molecular dynamics, for instance). At the same time, it is a computationally intensive problem and the computational cost rises exponentially with an increase in the number of dimensions (*curse of dimensionality*). We seek to devise probabilistic surrogate models based on Bayesian principles that reduce the computational expense of learning these high dimensional mappings and quantifies model-form uncertainties. In order to do so, we utilize *Gaussian Processes (GP)*, a non-parametric kernel based regression methodology. We also seek to understand how the model form uncertainty propagates through the model (*Uncertainty Propagation* problem).

Education

- Master of Science(MS) in Mechanical Engineering(August 2014 - Current)
  Purdue University, West Lafayette, IN
  Current G.P.A.: 3.4
  Expected graduation: May 2016
- Bachelor of Technology(B. Tech.) in Mechanical Engineering(July 2010 - May 2014)
  VIT University, Vellore, TN(India)
  G.P.A.: 9.02

Work Experience

- *Scooters India Ltd.* December 2012
  Worked on a project entitled "Complete Manufacturing and Assembly of a reverse gear sprocket". This project involved studying various stages involved in the manufacturing of a reverse gear sprocket and its eventual assembly into a typical Indian 3 wheeler auto-rickshaw.
- *Hindustan Aeronautics Limited* May 2012 - June 2012
  As a vocational trainee at HAL's *Transport Aircraft Division* in Kanpur(India), I was given a hands on experience in the operations of various departments within the factory including the Dornier shop , the loom shop , the hydraulics shop , the machining lab , the sheet metal and production lab , the CAD/CAM lab and the hydraulics and rotatables lab.