



A Web Tool for Customizable Remotely Sensed Information Searches

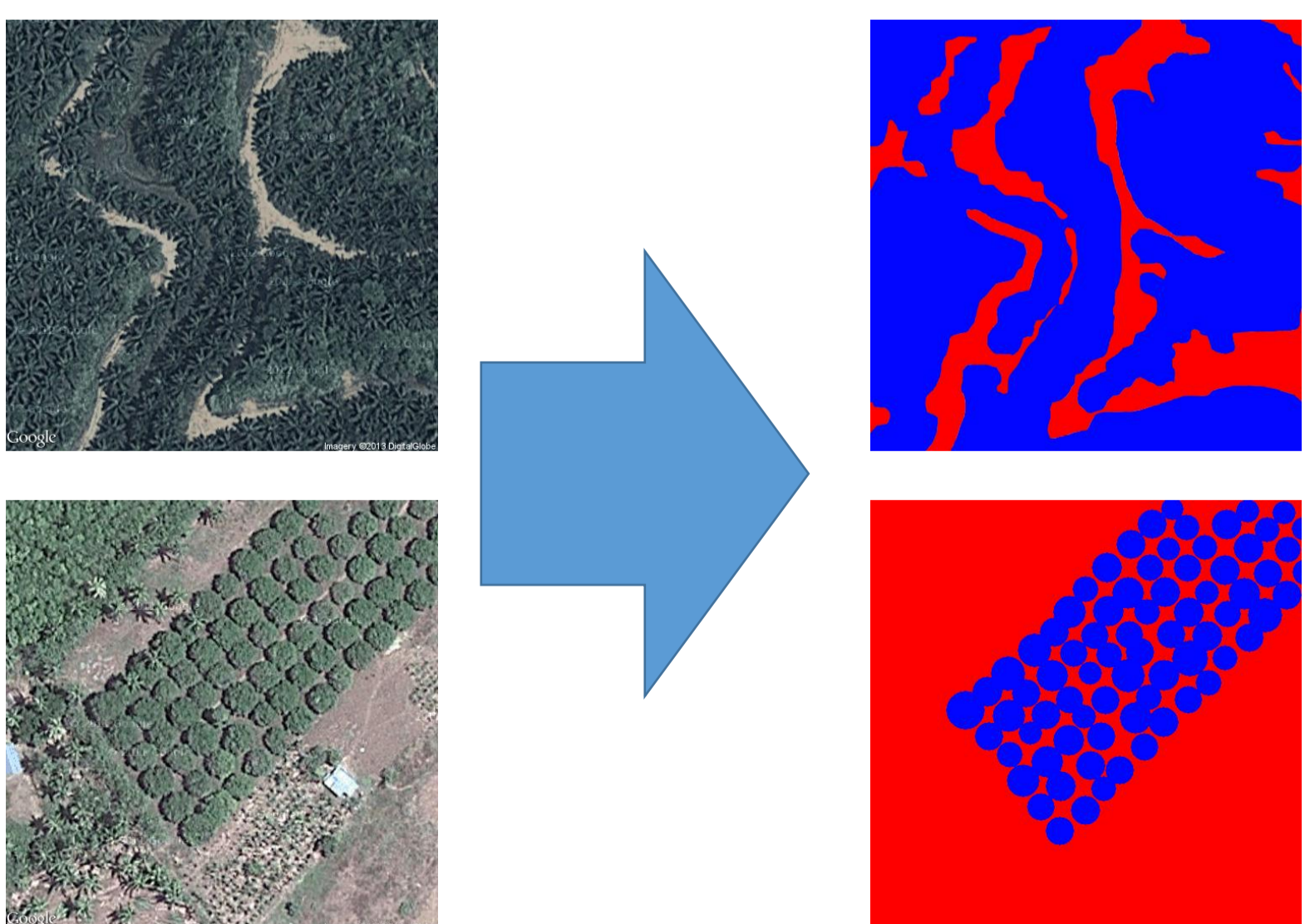
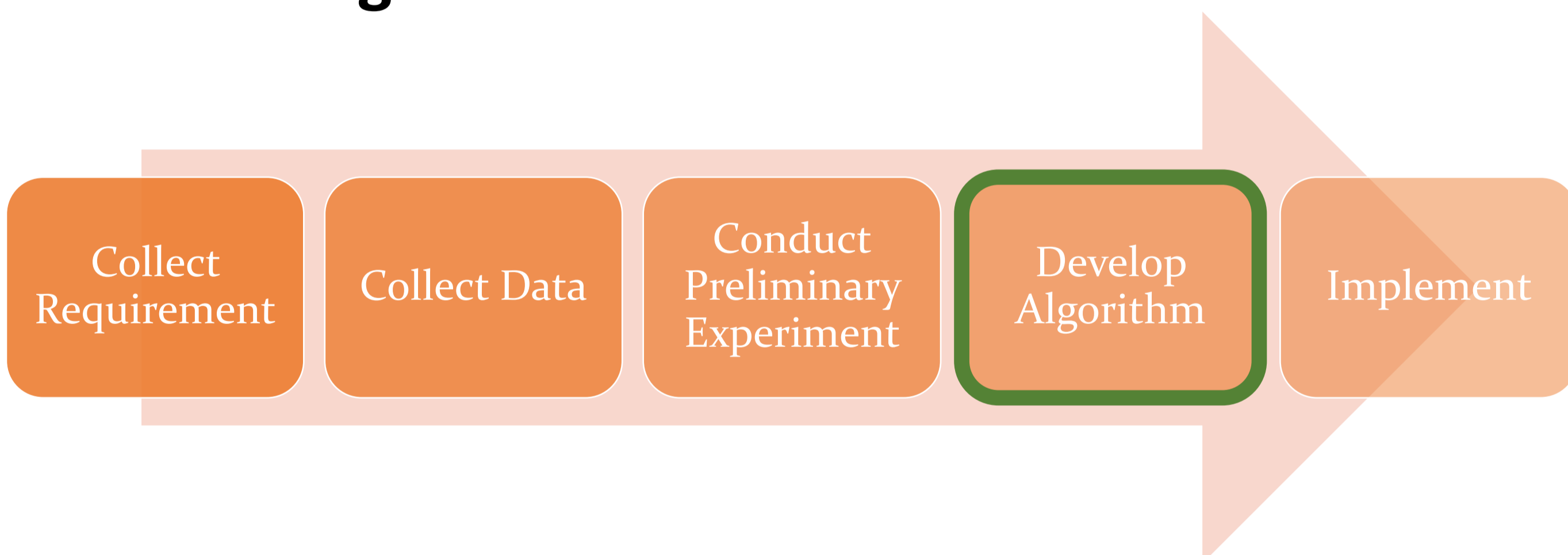
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Introduction

- The tasks of monitoring crop growth or detecting plant stressors require a large amount of information, provided by various applications.
- Vegetation classification has been one active research area for the past several decades, especially with regards to remote sensing data.
- High-resolution remote sensing images provide great details for image classification but difficult to be employed for large areas. Apart from their high cost, they are not always available nor their quality always guaranteed.
- We attempt to fill this gap by proposing an online vegetation classifier, utilizing Google Maps as an alternative data source.

Methodologies



- Our project involves 5 main stages
- The first 3 stages are for choosing engine and identifying the core problem
 - We are currently at 4th stage: building up the underlying engine algorithm
 - The final stage will be conducted as soon as the engine is mature

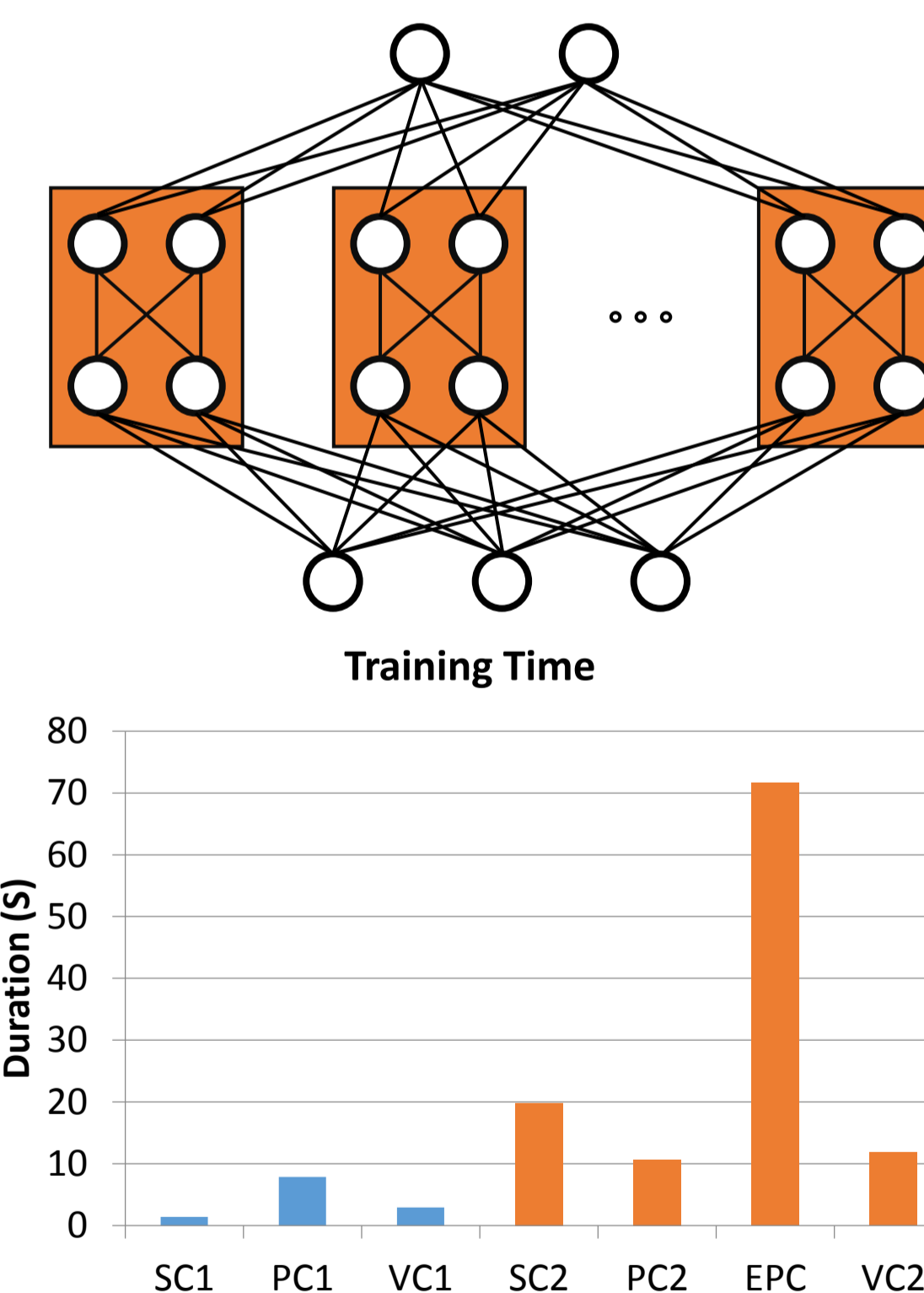
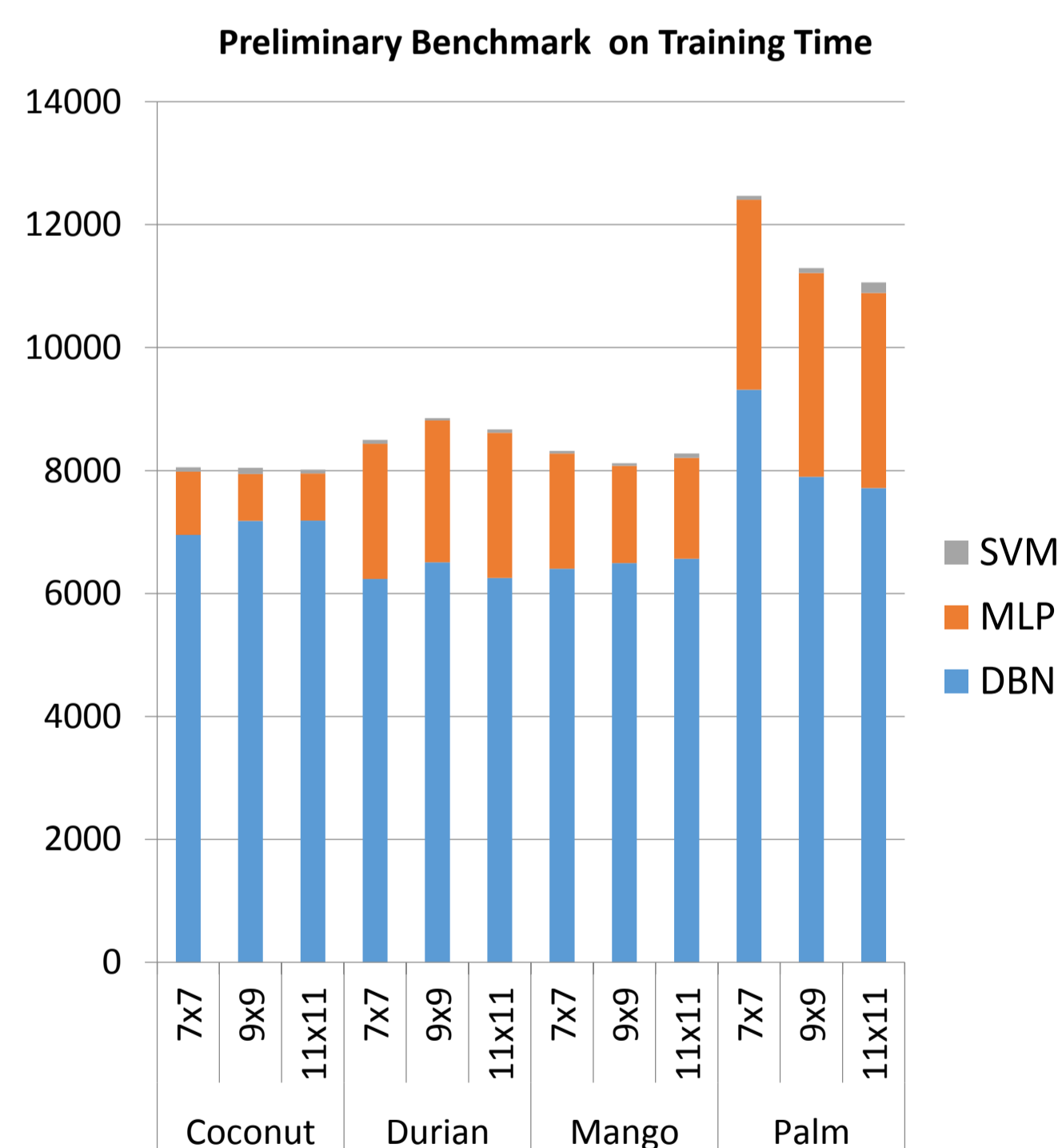
Result and Discussion

Preliminary Benchmark

- The champion is Deep Belief Network, a classifier from Neural Network family
- The classifier took enormous time to learn the problem

Speeding Up

- We proposed the Parallel Circuit approach, inspired from human retina
- Proved to boost up to 40% in speed while maintaining accuracy
- Need more investigation as it is working properly only within particular constraints.



Conclusion

- Limited training speed is identified as the major problem
- The proposed solution, Parallel Circuit, has been shown to be a solution with good trade-offs