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| **Task & Team** | **Description** | **October** | **November** | **December** | **January** |
| **Task 1**  Mykel Kochenderfer  Robert Moss (Research Lead)  Karen Leung | Adaptive Stress Testing (ATS) Modeling Framework | * Design and development of modular framework * Port stlcg to Julia | Incorporate STL (*signal temporal logic: event that happens over time*) specification | Incorporate Robustness calculations (*how close the requirement is to being violated*) | Incorporate STL specification interpretations (*human interpretable logical statements – “b/w 0 and 5 seconds the blinker will be on*”) |
| **Task 2**  Grace Gao  Shubh Gupta  Marco Pavone  Robert Dyro  Karen Leung | Uncertainty Models  *(Robert Dyro is working on second order optimization to speed up learning and provide safety guarantees in AV systems)* | Implement simple sensor models | Implement Outlier Detection  (same as observation of noise components? ) | * Devise STL-based simulation agents * Implement function approximation for action prob. | Model GPS Multipath efforts and outlier measurements using high fidelity GPS simulator |
| **Task 3**  Mykel Kochenderfer  Robert Moss | Computational Traceability (*Used to speed up the ATS process*) | Design two-layer approach into framework | Implement local optimization methods | Test optimization methods | Include Intelligent Driver Model (IDM) into framework |

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| **Task & Team** | **Description** | **February** | **March** | **April** | **May** | **June** |
| **Task 1**  Mykel Kochenderfer  Robert Moss | Adaptive Stress Testing (ATS) Modeling Framework | Test STL interpretability | Perform massive risk assessment test | STL interpretability data collection | Analysis of STL failures | Formalize work into paper |
| **Task 2**  Grace Gao  Shubh Gupta  Marco Pavone  Robert Dyro  Karen Leung | Uncertainty Models | Model vision-based perception and sensing with CARLA | Augment CARLA with realistic GPS sensing measurements and STL-based simulation agents | Expand to multi-modal sensing profiles including both vision and GPS | Analysis of uncertainty models | Formalize work into paper |
| **Task 3**  Mykel Kochenderfer  Robert Moss | Computational Traceability | Interface with CARLA | Test end-to-end risk assessment | Two-layer approach data collection | Analysis of RL/optimization methods. | Formalize work into paper |