6-Axis Manipulator Inverse Kinematic Solver

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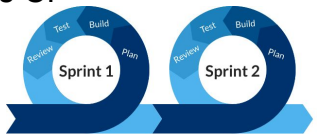
Objective

- Develop an inverse kinematic solver for a 6-axis robotic arm for Acme Robotics
- This module will return joint positions when given a desired tool position

Design Practices

- Agile iterative process
- Pair programming + design keeper
- Test driven development using Google tests and lcov coverage reports
- Continuous integration through Travis CI



Approach

- KUKA KR5 will be selected for robot characteristics
- Inverse and forward kinematics will be solved for a desired TCP position using DH procedure
- Eigen library will be used for linear algebra and matrix operations

Deliverables

- GitHub repository with source files, test files, and coverage report
- Detailed readme file
- UML class and activity diagrams
- 5-min video demoing modules