MATLAB EXPO 2018

Novedades de MATLAB y Simulink R2017b R2018a

David Pérez Moreno

Platform Productivity

Getting your work done faster

Workflow Depth

Support for your entire workflow

Application Breadth

Products for the work you do

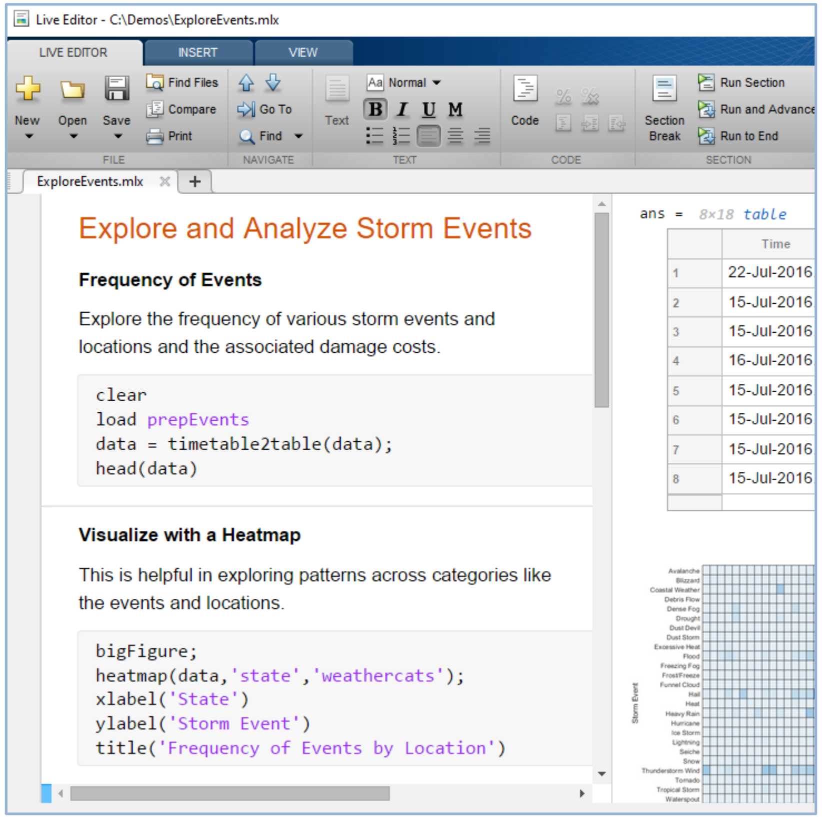
Platform Productivity

Workflow Depth

Application Breadth

- Create Your Designs Faster
- Simplify Analysis
- Simulate Faster and Scale Your Work
- Collaborate

Create Your Designs Faster



Explore and Analyze Storm Events

Frequency of Events

Explore the frequency of various storm events and locations and the associated damage costs.

```
clear
load prepEvents
data = timetable2table(data);
head(data)
```

```
ans = 8×18 table
```

	Time
1	22-Jul-2016
2	15-Jul-2016
3	15-Jul-2016
4	16-Jul-2016
5	15-Jul-2016
6	15-Jul-2016
7	15-Jul-2016
8	15-Jul-2016

Visualize with a Heatmap

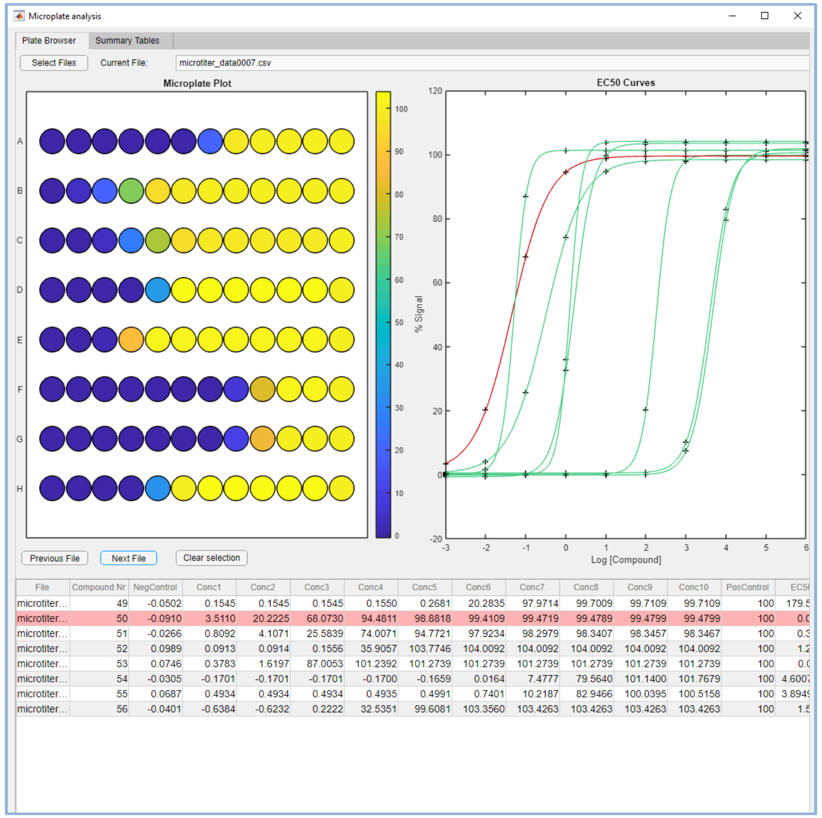
This is helpful in exploring patterns across categories like the events and locations.

```
bigFigure;
heatmap(data,'state','weathercats');
xlabel('State')
ylabel('Storm Event')
title('Frequency of Events by Location')
```

MATLAB

Live Editor

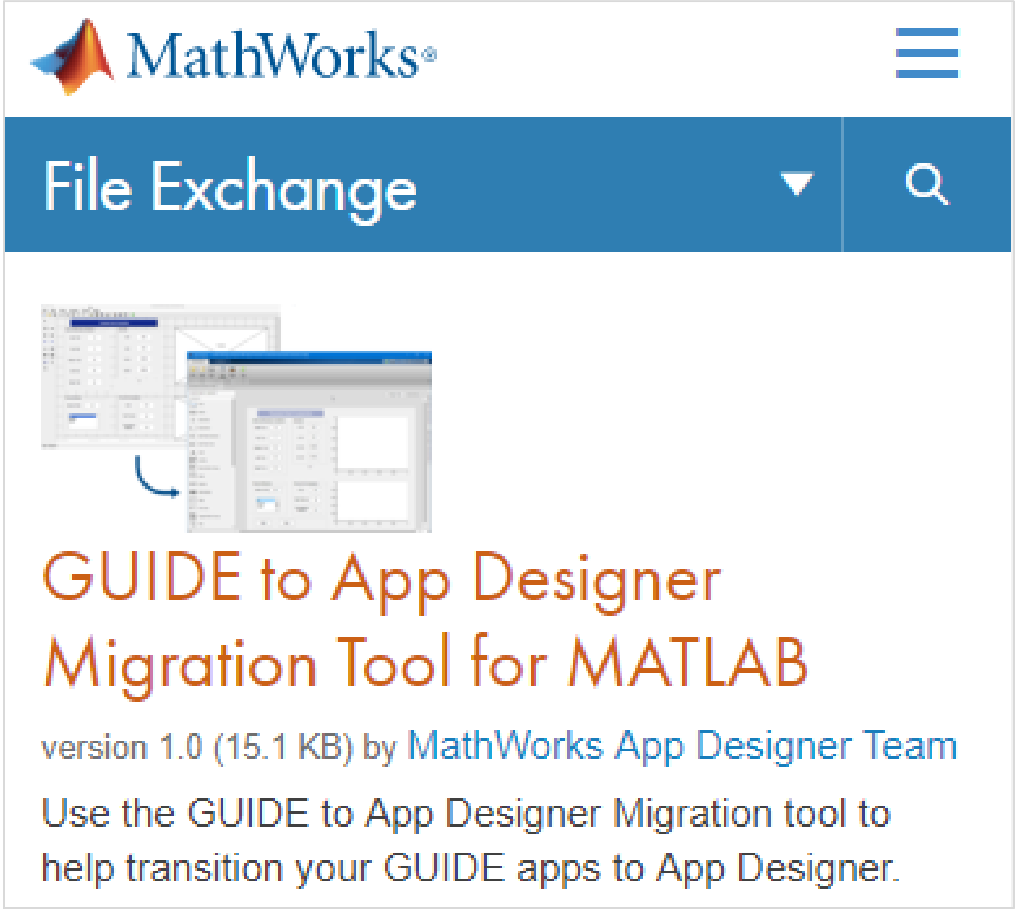
Create Your Designs Faster



File	Compound Nr	NegControl	Conc1	Conc2	Conc3	Conc4	Conc5	Conc6	Conc7	Conc8	Conc9	Conc10	PosControl	EC5
microtiter...	49	-0.0502	0.1545	0.1545	0.1545	0.1550	0.2681	20.2835	97.9714	99.7009	99.7109	99.7109	100	179.5
microtiter...	50	-0.0910	3.5110	20.2225	68.0730	94.4811	98.8818	99.4109	99.4719	99.4789	99.4799	99.4799	100	0.0
microtiter...	51	-0.0266	0.8092	4.1071	25.5839	74.0071	94.7721	97.9234	98.2979	98.3407	98.3457	98.3467	100	0.3
microtiter...	52	0.0989	0.0913	0.0914	0.1556	35.9057	103.7746	104.0092	104.0092	104.0092	104.0092	104.0092	100	1.2
microtiter...	53	0.0746	0.3783	1.6197	87.0053	101.2392	101.2739	101.2739	101.2739	101.2739	101.2739	101.2739	100	0.0
microtiter...	54	-0.0305	-0.1701	-0.1701	-0.1701	-0.1700	-0.1659	0.0164	7.4777	79.5640	101.1400	101.7679	100	4.6007
microtiter...	55	0.0687	0.4934	0.4934	0.4934	0.4935	0.4991	0.7401	10.2187	82.9466	100.0395	100.5158	100	3.894
microtiter...	56	-0.0401	-0.6384	-0.6232	0.2222	32.5351	99.6081	103.3560	103.4263	103.4263	103.4263	103.4263	100	1.5

MATLAB

App Designer

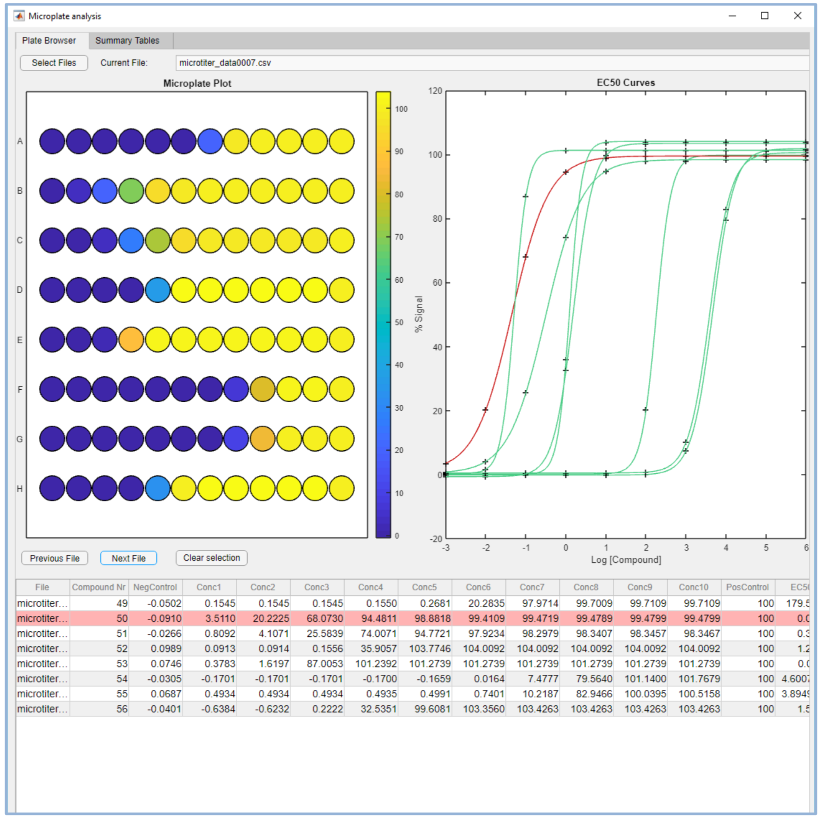


GUIDE to App Designer Migration Tool for MATLAB

version 1.0 (15.1 KB) by MathWorks App Designer Team

Use the GUIDE to App Designer Migration tool to help transition your GUIDE apps to App Designer.

Create Your Designs Faster



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microtiter…	51	-0.0266	0.8092	4.1071	25.5839	74.0071	94.7721	97.9234	98.2979	98.3407	98.3457	98.3467	100	0.3
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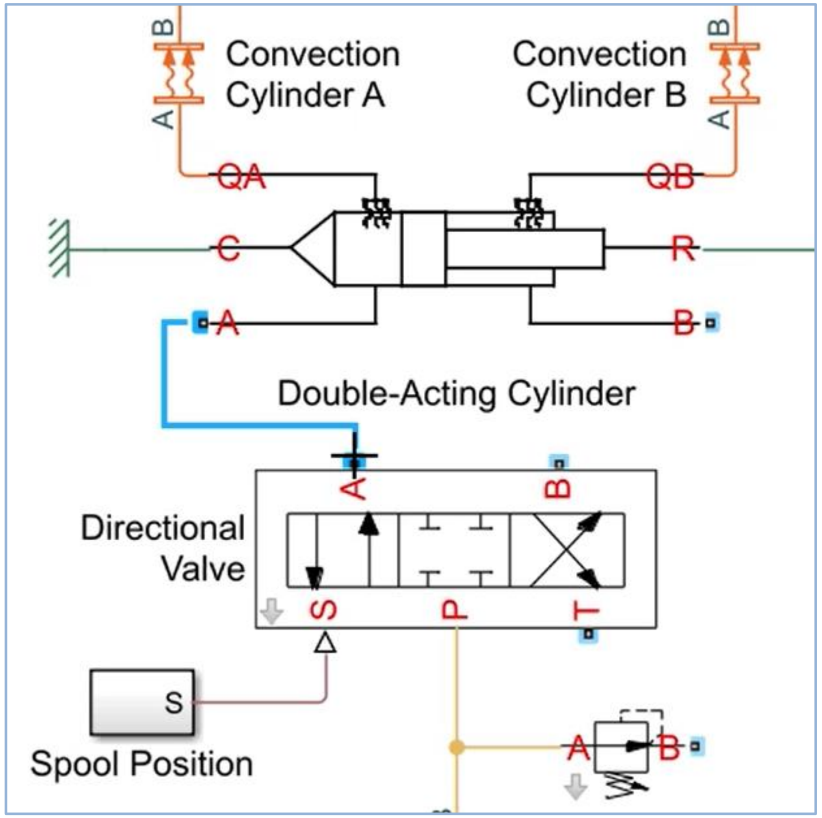
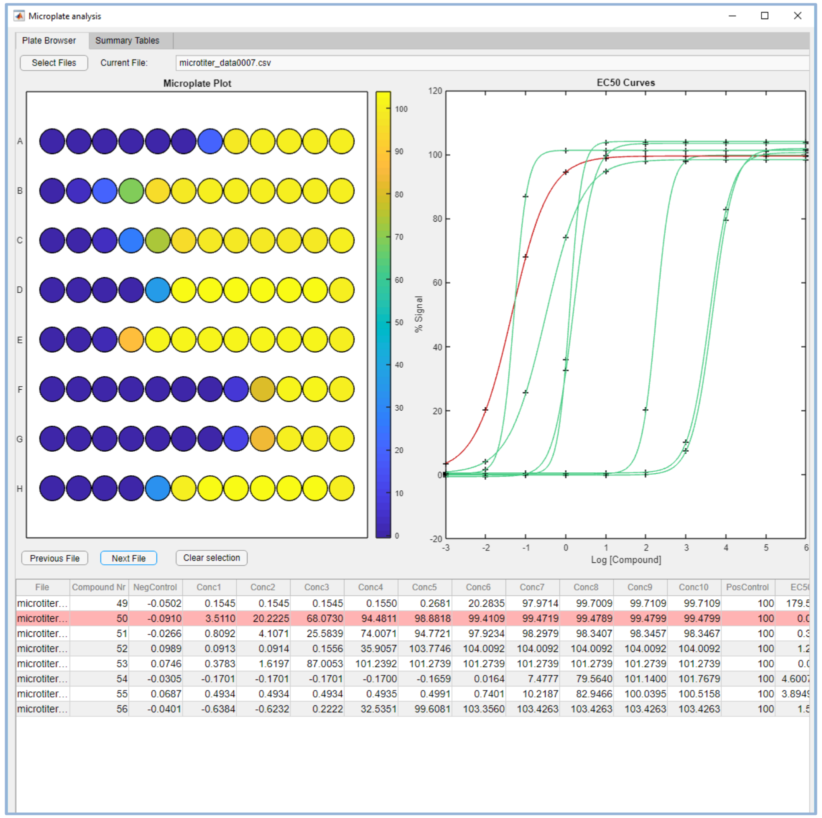


MATLAB

Simulink

Create Your Designs Faster



Current File: microtiter_data0007.csv

File	Compound Nr	NegControl	Conc1	Conc2	Conc3	Conc4	Conc5	Conc6	Conc7	Conc8	Conc9	Conc10	PosControl	EC5
microtiter...	49	-0.0502	0.1545	0.1545	0.1545	0.1550	0.2681	20.2835	97.9714	99.7009	99.7109	99.7109	100	179.5
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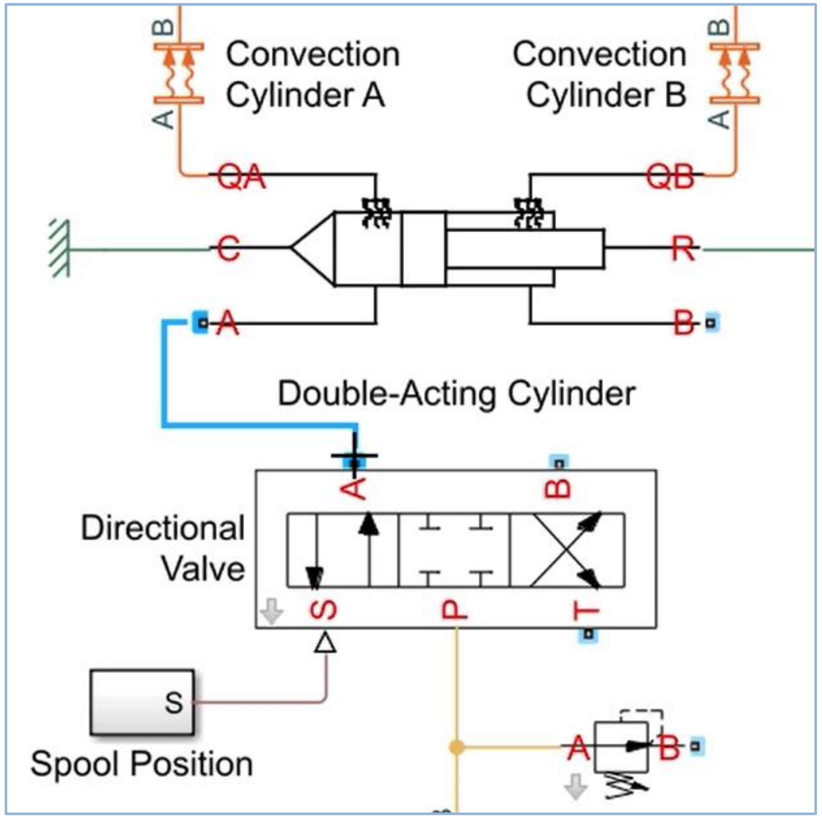
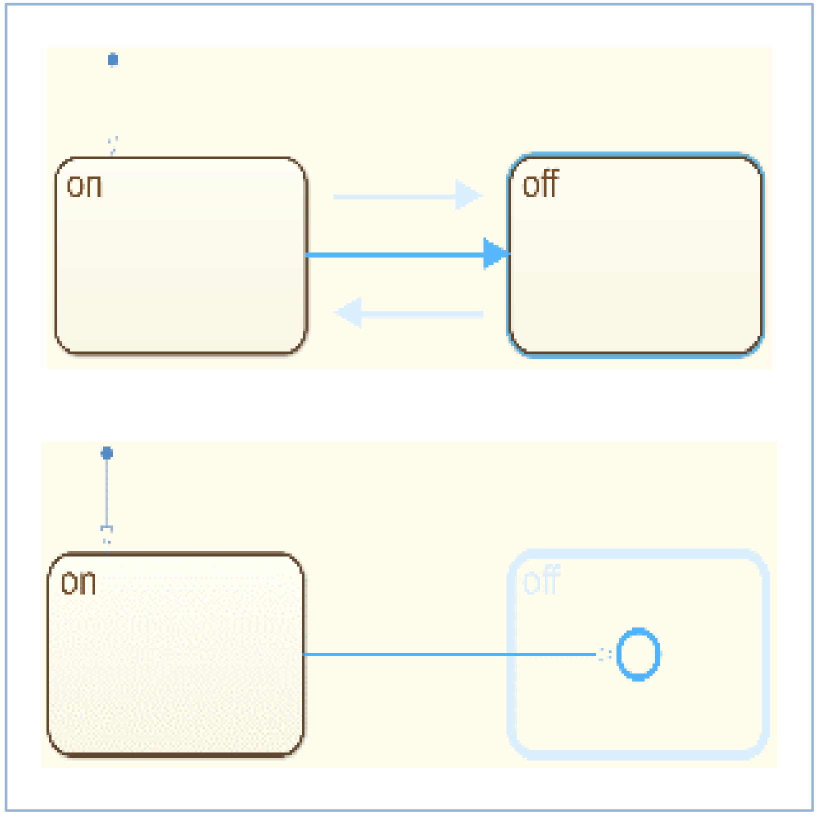




MATLAB

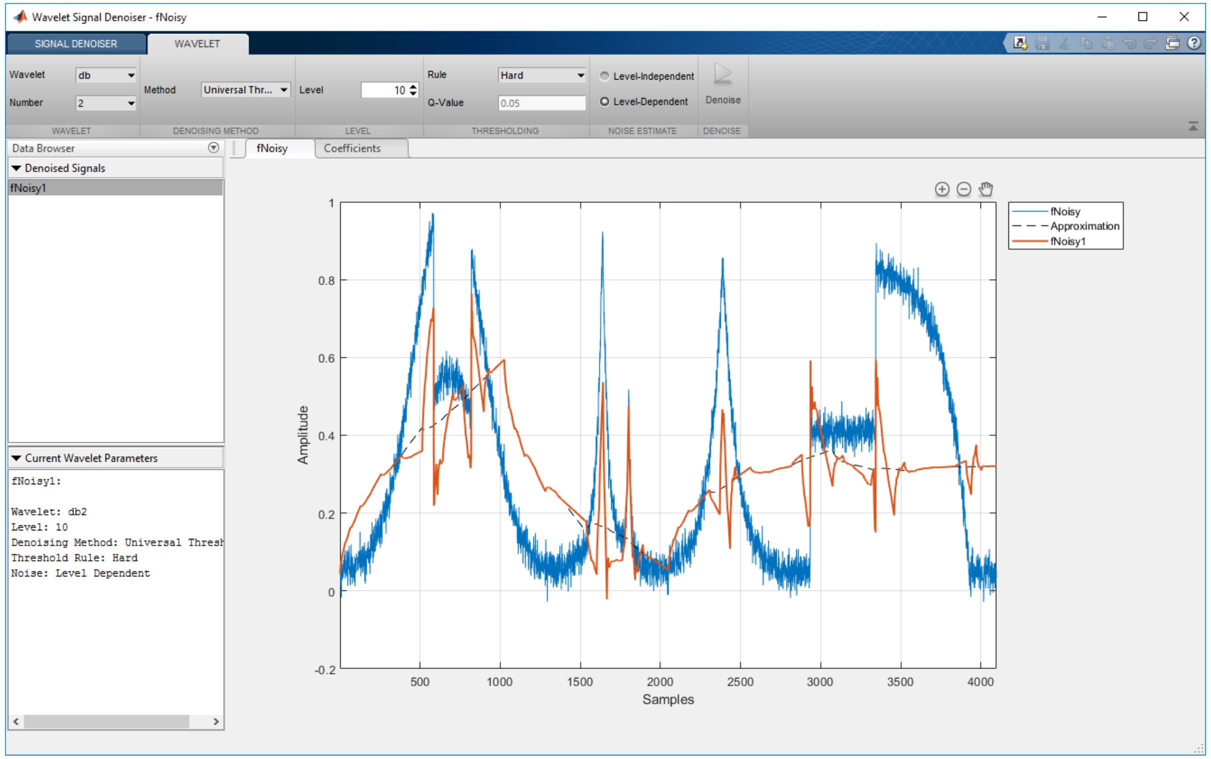
Simulink

Stateflow

Simplify Analysis with Apps

These interactive applications automate common technical computing tasks

- Econometric Modeler app
  - Perform time series analysis, specification testing, modeling, and diagnostics
- Analog Input Recorder app
  - Acquire and visualize analog input signals
- Wavelet Signal Denoiser app
  - Visualize and denoise time series data



Wavelet Signal Denoiser - fNoisy

Wavelet: db
Number: 2
Method: Universal Thr...
Level: 10
Rule: Hard
Q-Value: 0.05
○ Level-Independent
● Level-Dependent

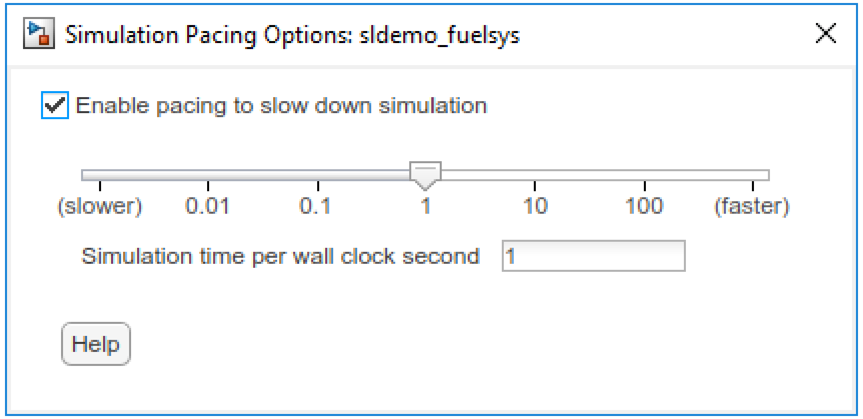
```
fNoisy1:

Wavelet: db2
Level: 10
Denoising Method: Universal Thresh
Threshold Rule: Hard
Noise: Level Dependent
```

Econometrics Toolbox
Data Acquisition Toolbox
Wavelet Toolbox

Simplify Analysis by Simulating at Wall Clock Speed

Slow down the simulation for easier model interactivity

- Especially for models controlled and monitored via Dashboard blocks and other displays
- Useful when model is connected to hardware



Simulation Pacing Options: sldemo_fuelsys

☑ Enable pacing to slow down simulation

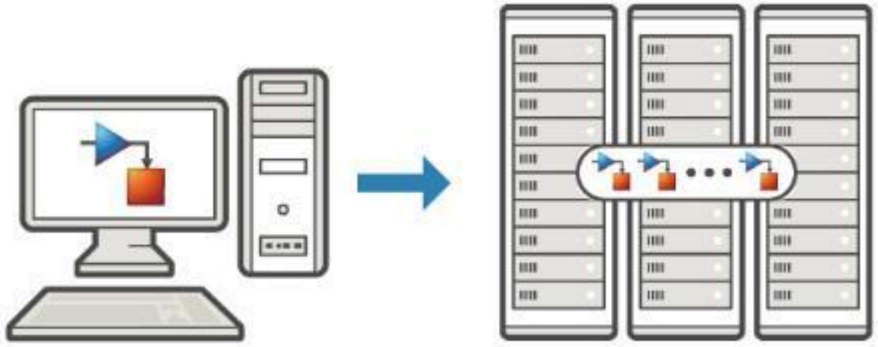
Simulation time per wall clock second: 1

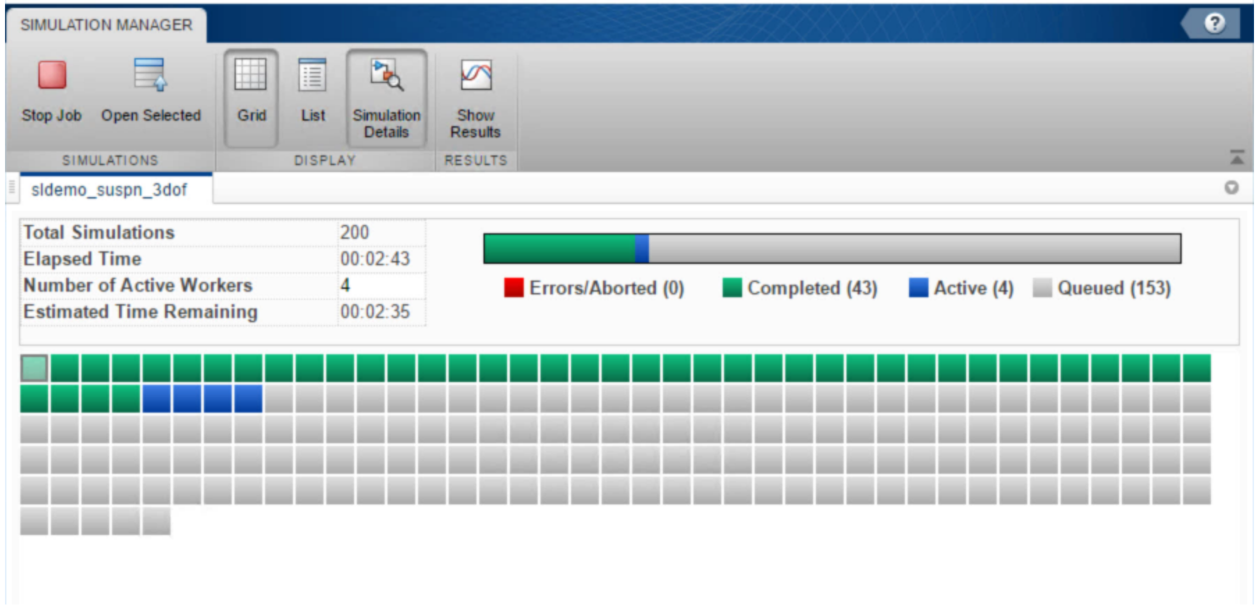
Scale Your Work

Use parallel computing to run multiple simulations faster

- Run multiple parallel simulations with **`parsim`**

- Monitor simulation status and progress in the Simulation Manager





Total Simulations	200
Elapsed Time	00:02:43
Number of Active Workers	4
Estimated Time Remaining	00:02:35

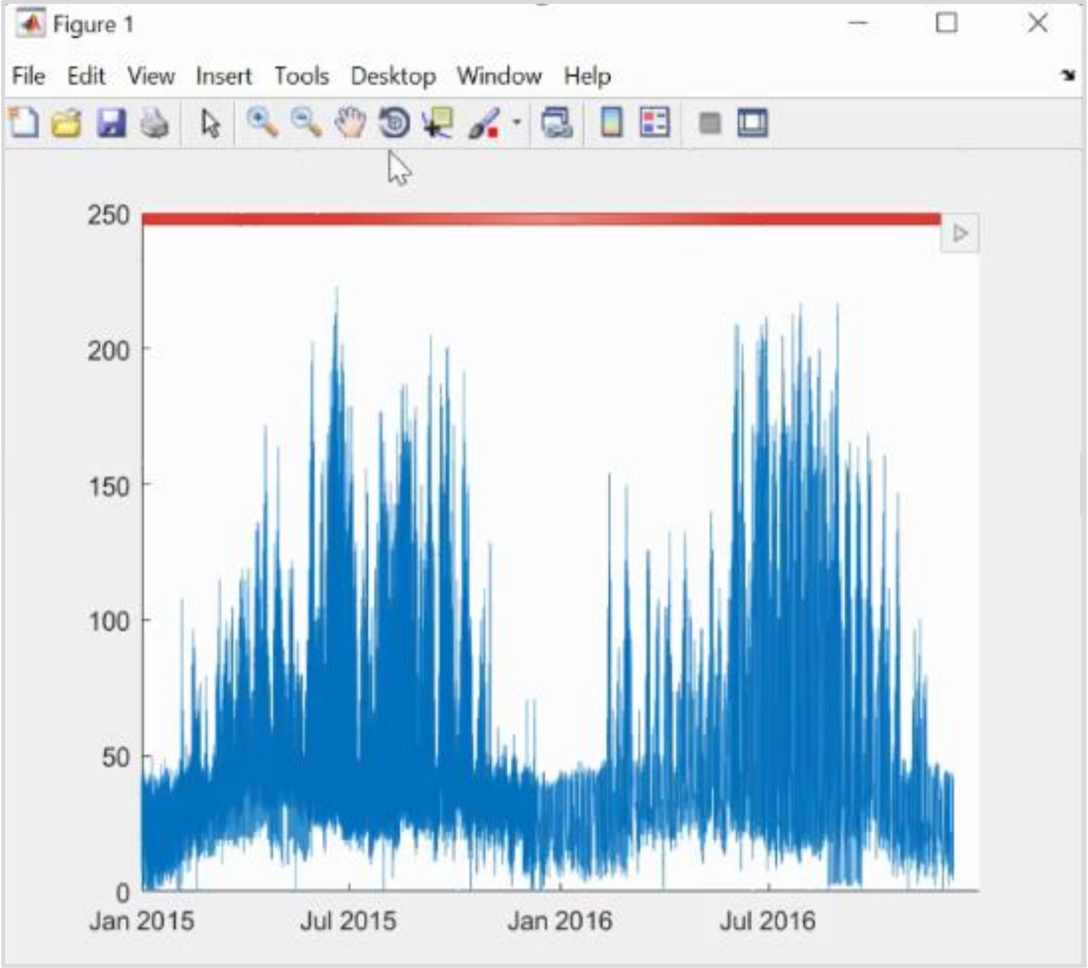
🟥 Errors/Aborted (0) 🟩 Completed (43) 🟦 Active (4) ⬜ Queued (153)

Parallel Computing Toolbox
MATLAB Distributed Computing Server

Scale Your Work

Use tall arrays to manipulate and analyze data that is too big to fit in memory

- Use familiar MATLAB functions and syntax
- Support for hundreds of functions
- Works with Spark + Hadoop clusters

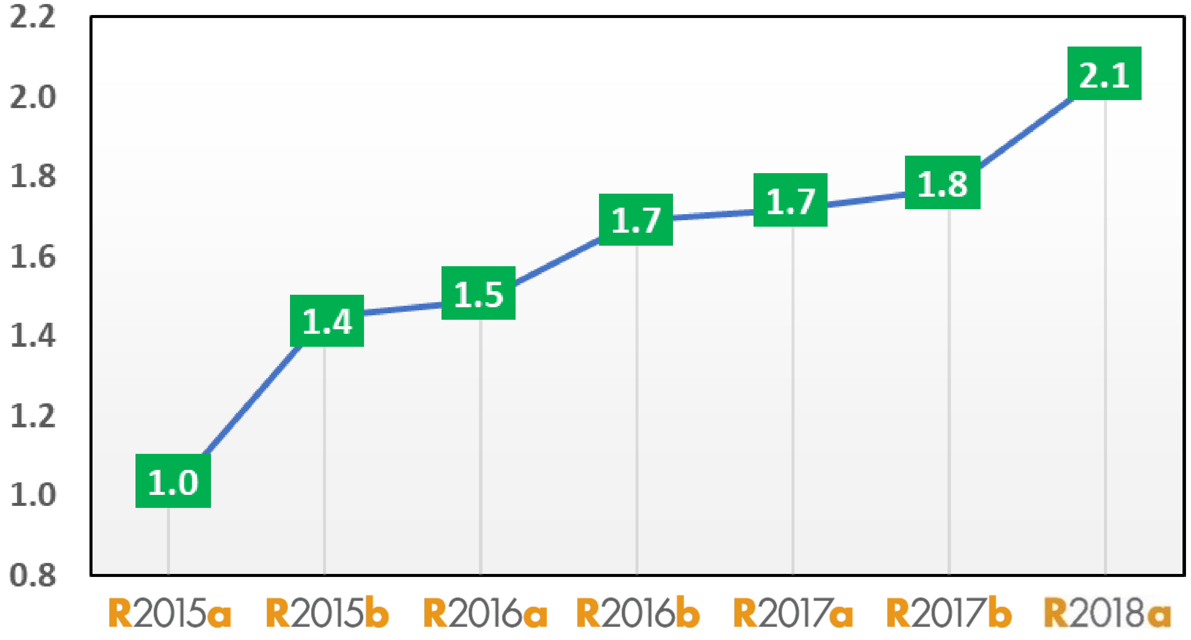


Simulate Faster

Redesigned execution engine runs MATLAB code faster

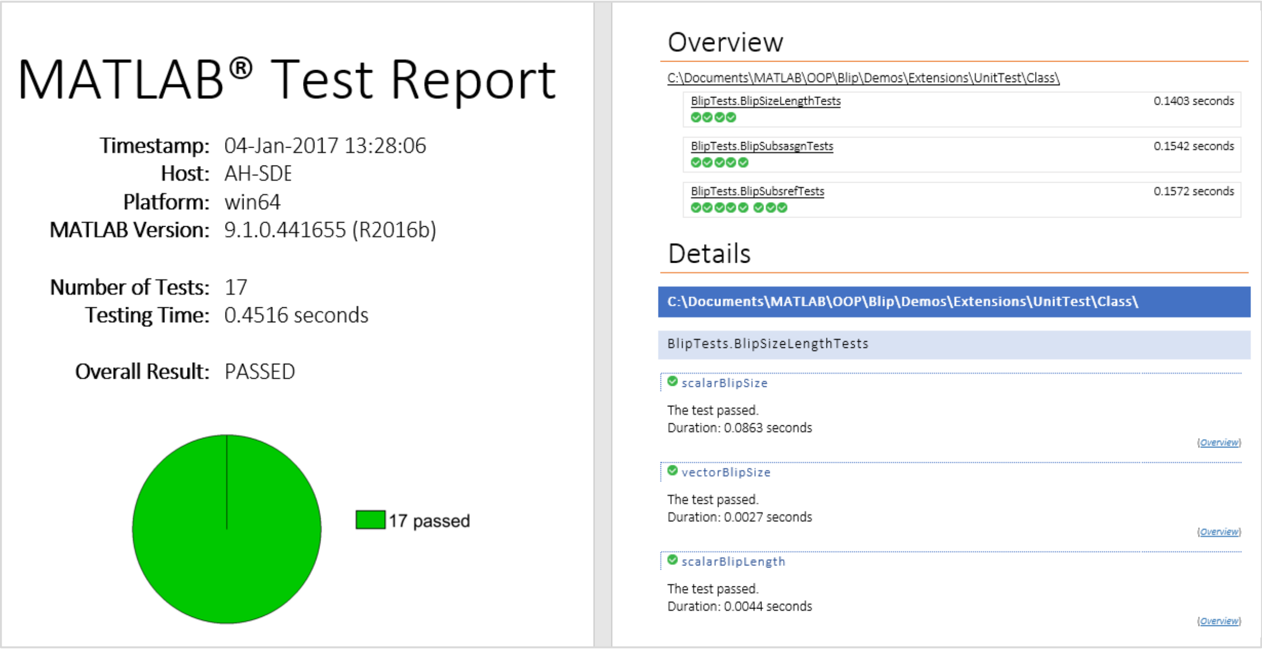
- All MATLAB code can now be JIT compiled
- MATLAB runs your code over twice as fast as it did just three years ago
- No need to change a single line of your code
- Increased speed of MATLAB startup in R2018a

Average Speedup in Customer Workflows



Team Collaboration

Use advanced software development features to manage, test, and integrate MATLAB code



MATLAB® Test Report

Timestamp: 04-Jan-2017 13:28:06
Host: AH-SDE
Platform: win64
MATLAB Version: 9.1.0.441655 (R2016b)

Number of Tests: 17
Testing Time: 0.4516 seconds

Overall Result: PASSED

Overview

C:\Documents\MATLAB\OOP\Blip\Demos\Extensions\UnitTest\Class\

BlipTests.BlipSizeLengthTests 0.1403 seconds
✓✓✓✓

BlipTests.BlipSubsasgnTests 0.1542 seconds
✓✓✓✓✓

BlipTests.BlipSubsrefTests 0.1572 seconds
✓✓✓✓✓ ✓✓✓

Details

C:\Documents\MATLAB\OOP\Blip\Demos\Extensions\UnitTest\Class\

BlipTests.BlipSizeLengthTests

✓ scalarBlipSize

The test passed.
Duration: 0.0863 seconds

(Overview)

✓ vectorBlipSize

The test passed.
Duration: 0.0027 seconds

(Overview)

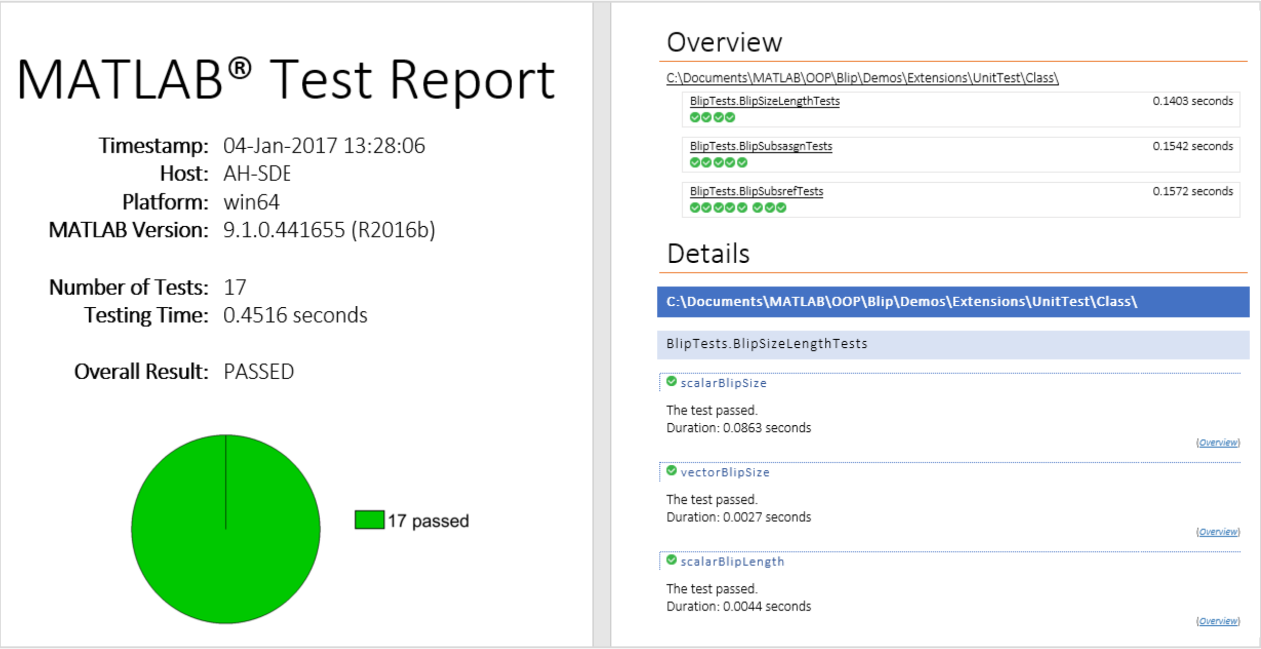
✓ scalarBlipLength

The test passed.
Duration: 0.0044 seconds

(Overview)

Team Collaboration

Use advanced software development features to manage, test, and integrate MATLAB code



MATLAB® Test Report

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Host:	AH-SDE
Platform:	win64
MATLAB Version:	9.1.0.441655 (R2016b)
Number of Tests:	17
Testing Time:	0.4516 seconds
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Overview

C:\Documents\MATLAB\OOP\Blip\Demos\Extensions\UnitTest\Class\

BlipTests.BlipSizeLengthTests ✓✓✓✓	0.1403 seconds
BlipTests.BlipSubsasgnTests ✓✓✓✓✓	0.1542 seconds
BlipTests.BlipSubsrefTests ✓✓✓✓✓ ✓✓✓	0.1572 seconds

Details

C:\Documents\MATLAB\OOP\Blip\Demos\Extensions\UnitTest\Class\

BlipTests.BlipSizeLengthTests

✓ scalarBlipSize

The test passed.
Duration: 0.0863 seconds

(Overview)

✓ vectorBlipSize

The test passed.
Duration: 0.0027 seconds

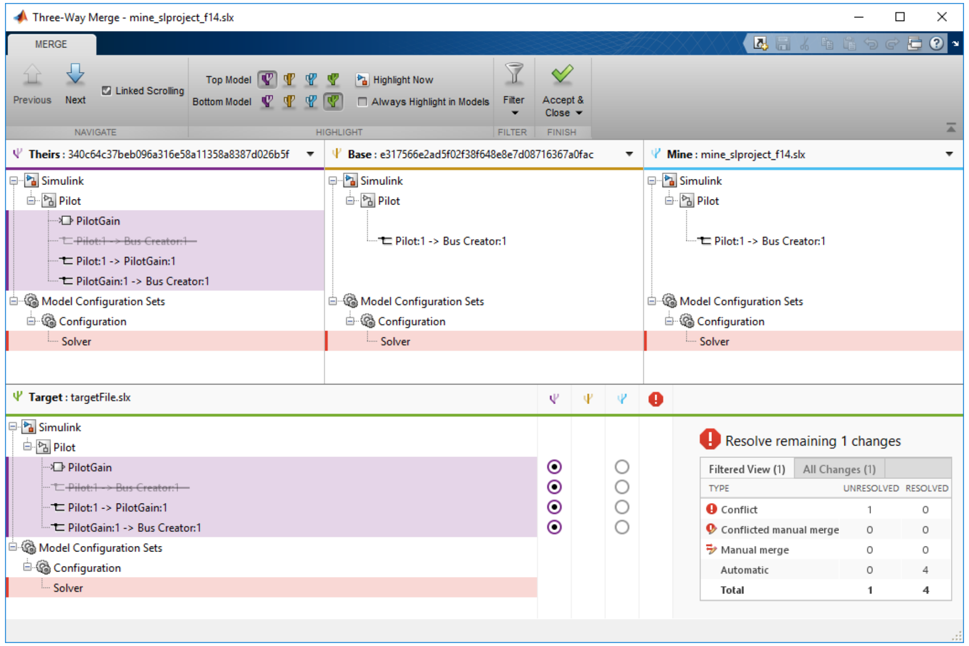
(Overview)

✓ scalarBlipLength

The test passed.
Duration: 0.0044 seconds

(Overview)

Identify differences between model elements, Stateflow charts, and MATLAB Function blocks



Three-Way Merge - mine_slproject_f14.slx

Theirs : 340c64c37beb096a316e58a11358a8387d026b5f

- Simulink
  - Pilot
    - PilotGain
    - ~~Pilot:1 -> Bus Creator:1~~
    - Pilot:1 -> PilotGain:1
    - PilotGain:1 -> Bus Creator:1
- Model Configuration Sets
  - Configuration
    - Solver

Base : e317566e2ad5f02f38f648e8e7d08716367a0fac

- Simulink
  - Pilot
    - Pilot:1 -> Bus Creator:1
- Model Configuration Sets
  - Configuration
    - Solver

Mine : mine_slproject_f14.slx

- Simulink
  - Pilot
    - Pilot:1 -> Bus Creator:1
- Model Configuration Sets
  - Configuration
    - Solver

Target : targetFile.slx

- Simulink
  - Pilot
    - PilotGain ● ○
    - ~~Pilot:1 -> Bus Creator:1~~ ● ○
    - Pilot:1 -> PilotGain:1 ● ○
    - PilotGain:1 -> Bus Creator:1 ● ○
- Model Configuration Sets
  - Configuration
    - Solver

Resolve remaining 1 changes

Filtered View (1) | All Changes (1)

TYPE	UNRESOLVED	RESOLVED
Conflict	1	0
Conflicted manual merge	0	0
Manual merge	0	0
Automatic	0	4
Total	**1**	**4**

Platform Productivity

Workflow Depth

Application Breadth

- Create Your Designs Faster
- Simplify Analysis
- Simulate Faster and Scale Your Work
- Collaborate

Platform Productivity

Workflow Depth

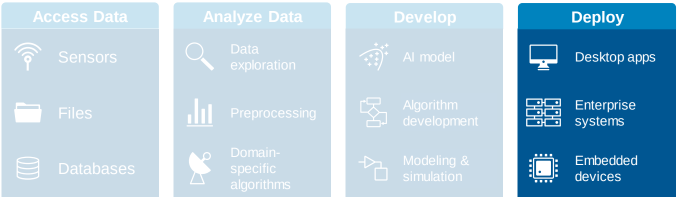
Application Breadth

- Deployment of MATLAB Algorithms and Applications
- Code Generation from Simulink Models
- Verification and Validation

Deploy MATLAB Algorithms and Applications

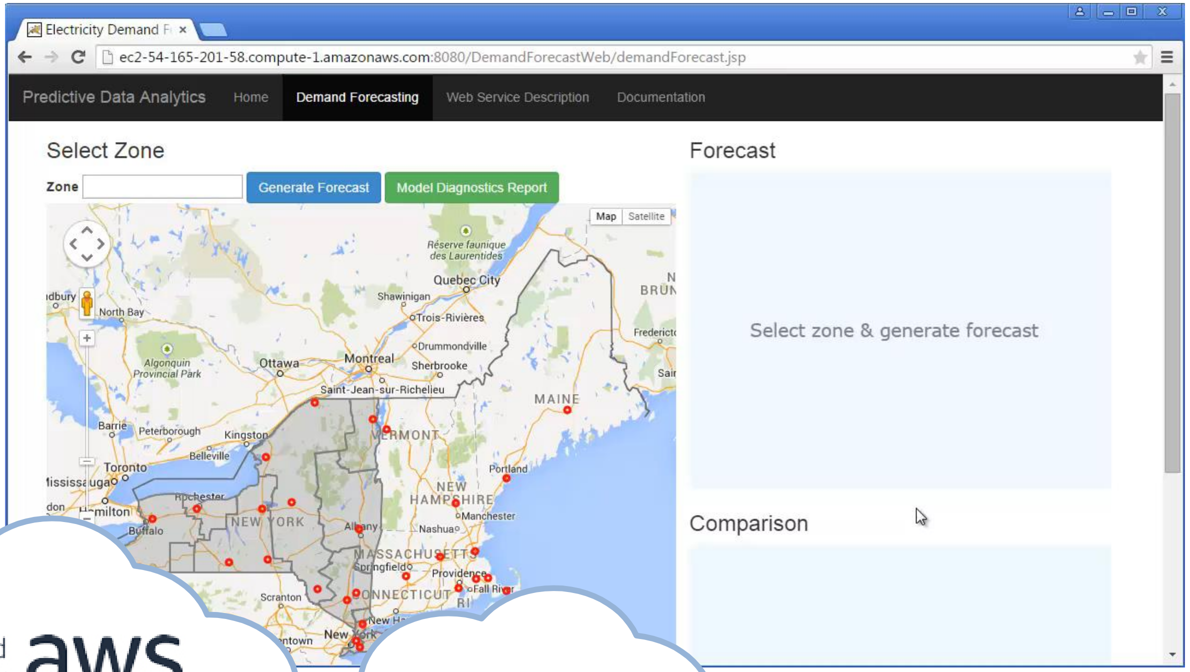
Access Data	Analyze Data	Develop	Deploy
Sensors	Data exploration	AI model	Desktop apps
Files	Preprocessing	Algorithm development	Enterprise systems
Databases	Domain-specific algorithms	Modeling & simulation	Embedded devices

Deploy MATLAB Algorithms and Applications



Share your work outside of MATLAB without having to recode your algorithms

- Standalone desktop applications
- Add-ins for Microsoft Excel
- Software components to integrate with other languages *(C/C++, .NET, Python, Java)*
- Software components for web and enterprise applications



ec2-54-165-201-58.compute-1.amazonaws.com:8080/DemandForecastWeb/demandForecast.jsp

Select Zone

Zone

Forecast

Select zone & generate forecast

Comparison

powered by aws

Azure

MATLAB Compiler
MATLAB Compiler SDK
MATLAB Production Server

Deploy MATLAB Algorithms and Applications

Share your work outside of MATLAB without having to recode your algorithms

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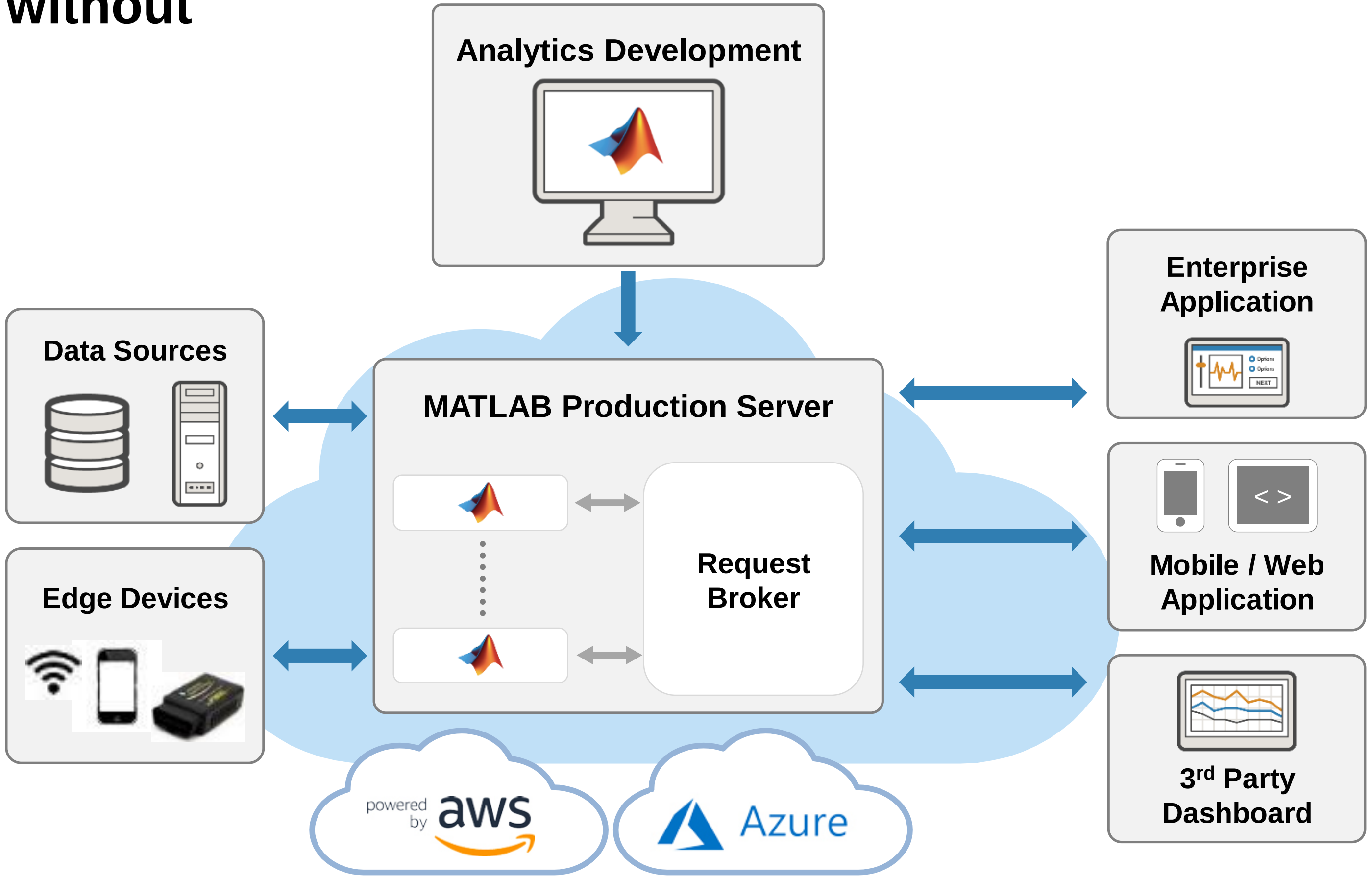
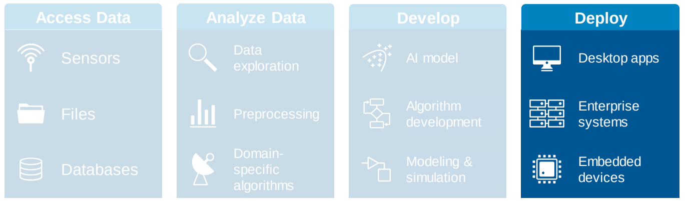


MATLAB Compiler
MATLAB Compiler SDK
MATLAB Production Server

Deploy MATLAB Algorithms



Access Data

- Sensors
- Files
- Databases

Analyze Data

- Data exploration
- Preprocessing
- Domain-specific algorithms

Develop

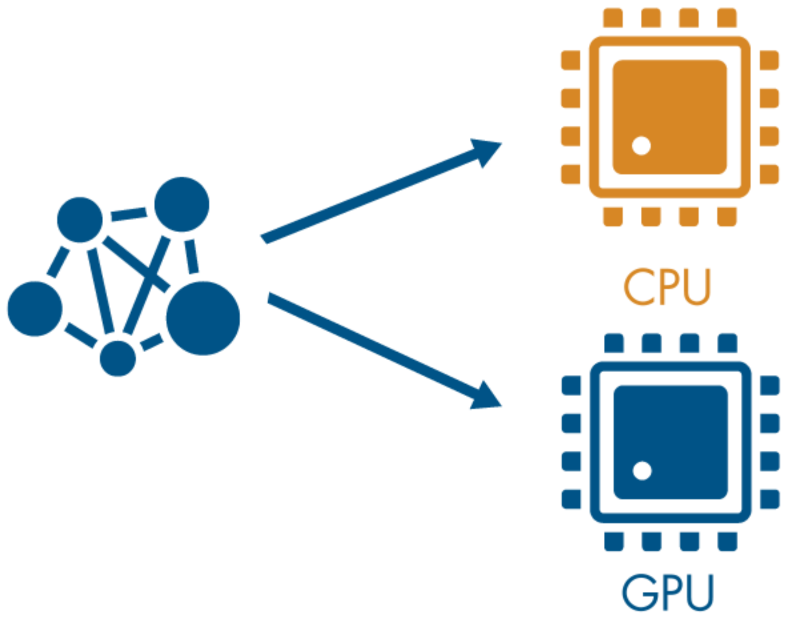
- AI model
- Algorithm development
- Modeling & simulation

Deploy

- Desktop apps
- Enterprise systems
- Embedded devices

Deploy machine learning and deep learning models using automatically generated code

- Generate C code for predictive machine learning and deep learning models
- Generate optimized CUDA code for deep learning, embedded vision, and autonomous systems

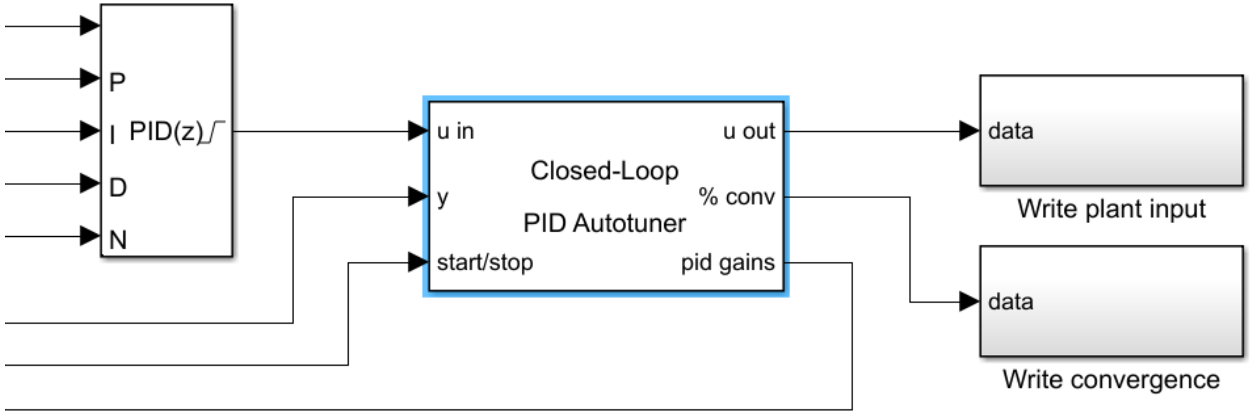


MATLAB Coder
GPU Coder

PID Control Tuning

Implement an embedded PID auto-tuning algorithm

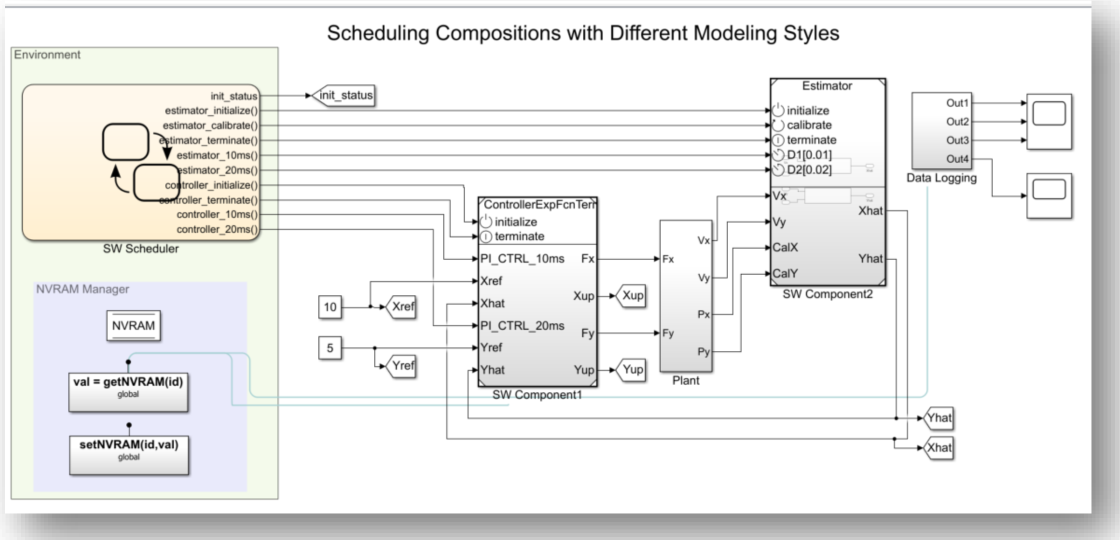
- Automatically tune PID controller gains in real time against a physical plant
- No model of plant dynamics required
- Deploy the auto-tuning algorithm to embedded software using automatic code generation



Simulink Control Design

Prepare Your Model for Code Generation

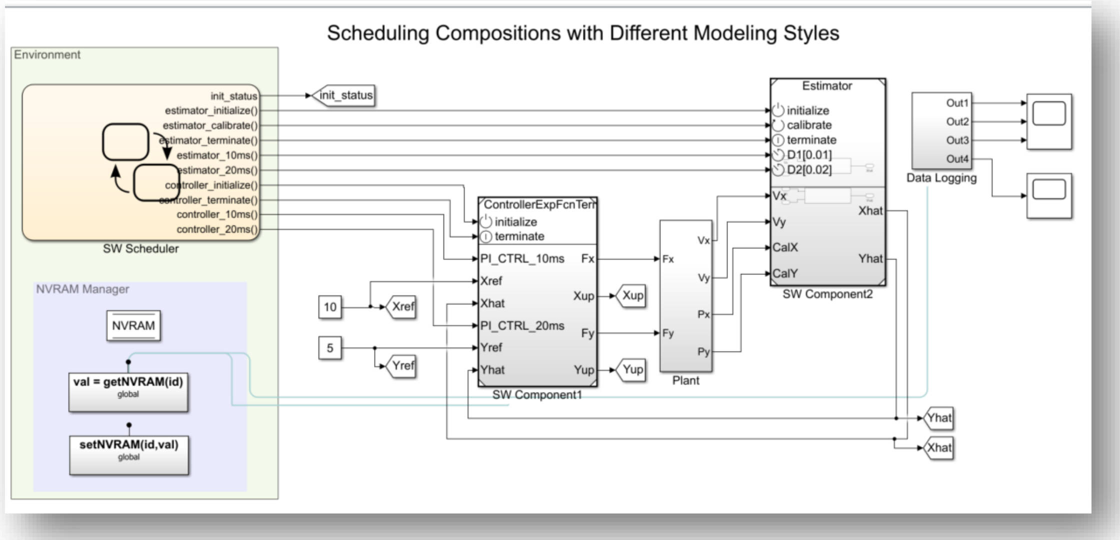
Prepare model components for code generation



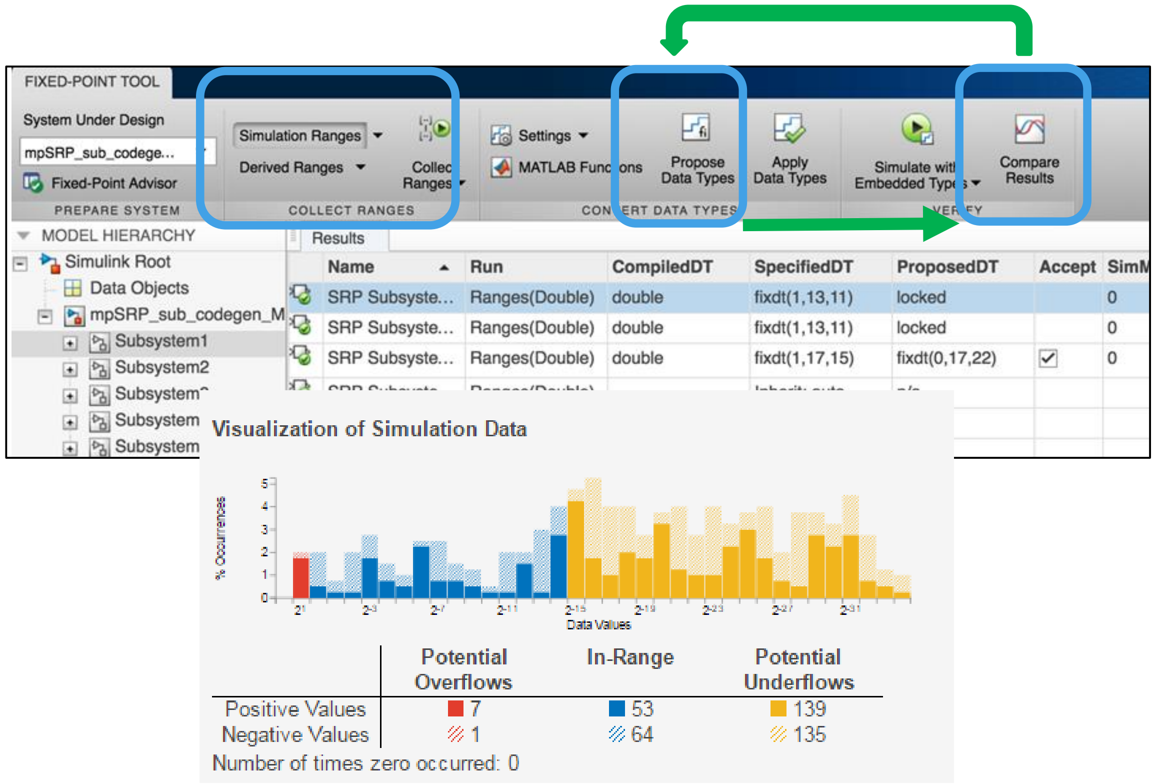
Simulink Coder
Fixed-Point Designer

Prepare Your Model for Code Generation

Prepare model components for code generation



Prepare model data for code generation



Name	Run	CompiledDT	SpecifiedDT	ProposedDT	Accept	SimM
SRP Subsyste...	Ranges(Double)	double	fixdt(1,13,11)	locked		0
SRP Subsyste...	Ranges(Double)	double	fixdt(1,13,11)	locked		0
SRP Subsyste...	Ranges(Double)	double	fixdt(1,17,15)	fixdt(0,17,22)	☑	0

Visualization of Simulation Data

	Potential Overflows	In-Range	Potential Underflows
Positive Values	🟥 7	🟦 53	🟨 139
Negative Values	▨ 1	▨ 64	▨ 135

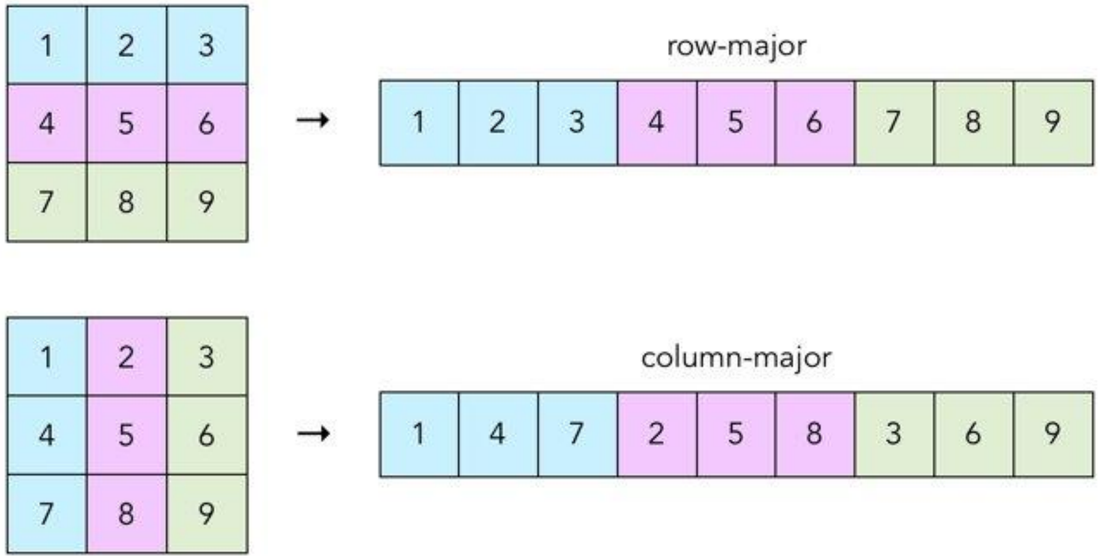
Number of times zero occurred: 0

Simulink Coder
Fixed-Point Designer

Generate Code from Simulink Models

Access and define all the information in your model related to code generation

- View and define implementation data in one place
- View implementation details without model details
- Improve code performance and ease integration with other C code



Row-major memory layout option

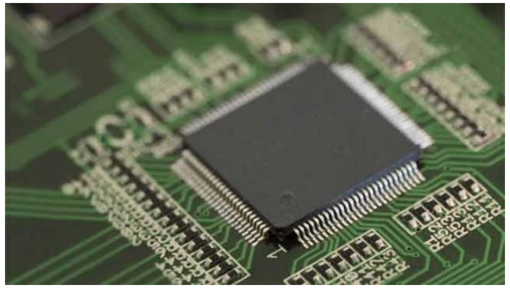
MATLAB Coder
Embedded Coder
Simulink Fixed-Point

Connecting Your Design to Hardware

Connect directly to hardware with support packages

- Live streaming to and from hardware
- Run Simulink models on low-cost hardware, such as Arduino, Raspberry Pi, and LEGO
- Automatically generate code and run it on microprocessors, FPGAs, and more.

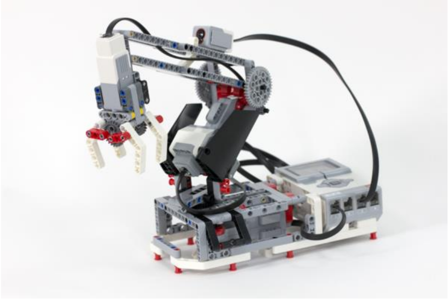
Arduino



ARM Cortex

Raspberry Pi

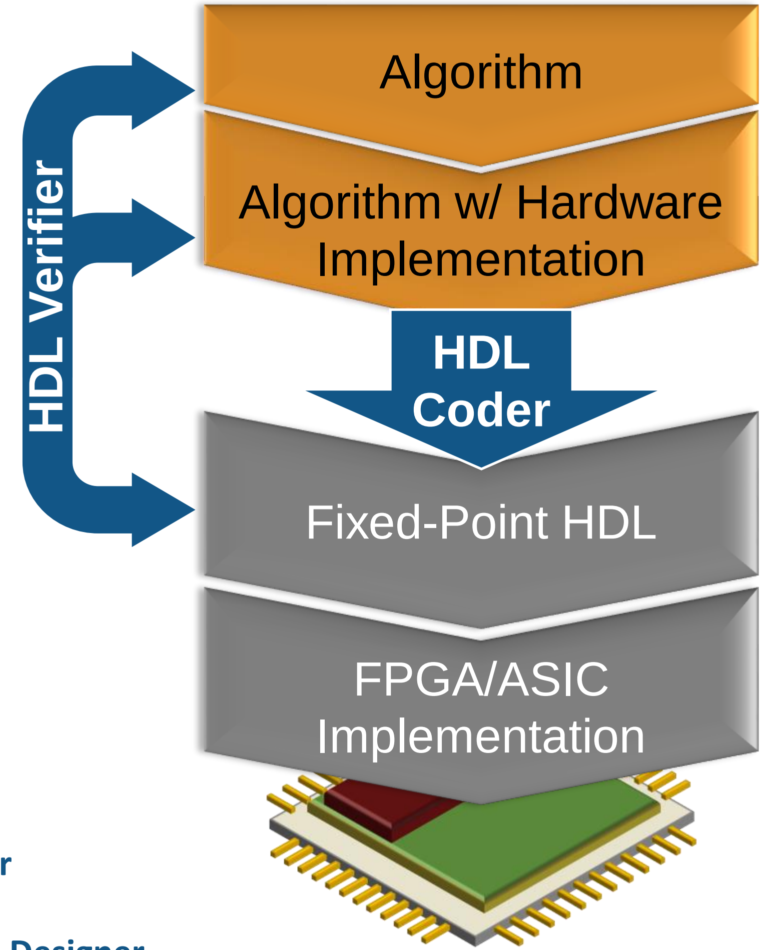
Microsemi FPGA



LEGO

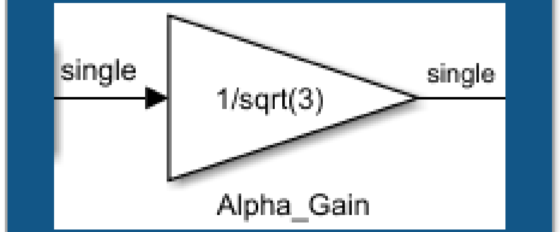
ADALM-PLUTO

Deploying to FPGA or ASIC Hardware

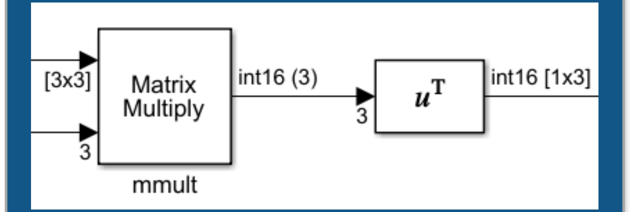


HDL Verifier
HDL Coder
Fixed-Point Designer
Vision HDL Toolbox
LTE HDL Toolbox

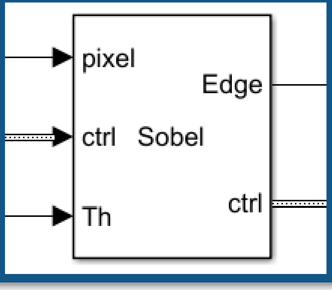
Native Floating Point



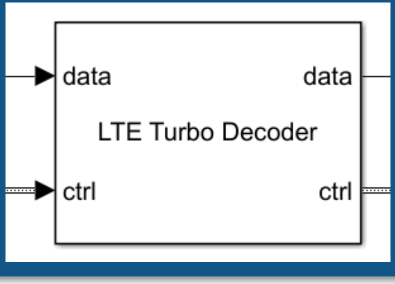
Matrix Support



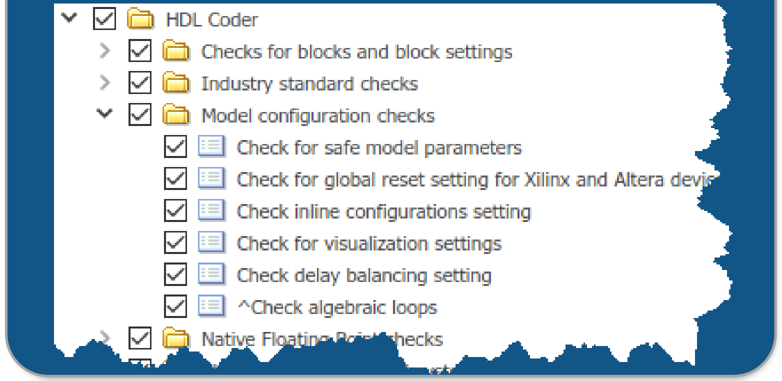
Vision HDL Toolbox



LTE HDL Toolbox



HDL Checks in Model Advisor

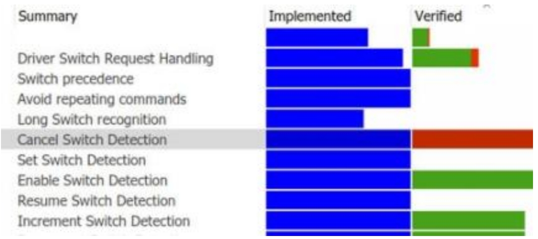


- ☑ HDL Coder
  - ☑ Checks for blocks and block settings
  - ☑ Industry standard checks
  - ☑ Model configuration checks
    - ☑ Check for safe model parameters
    - ☑ Check for global reset setting for Xilinx and Altera devic
    - ☑ Check inline configurations setting
    - ☑ Check for visualization settings
    - ☑ Check delay balancing setting
    - ☑ ^Check algebraic loops
  - ☑ Native Floating-Point checks

Verification and Validation

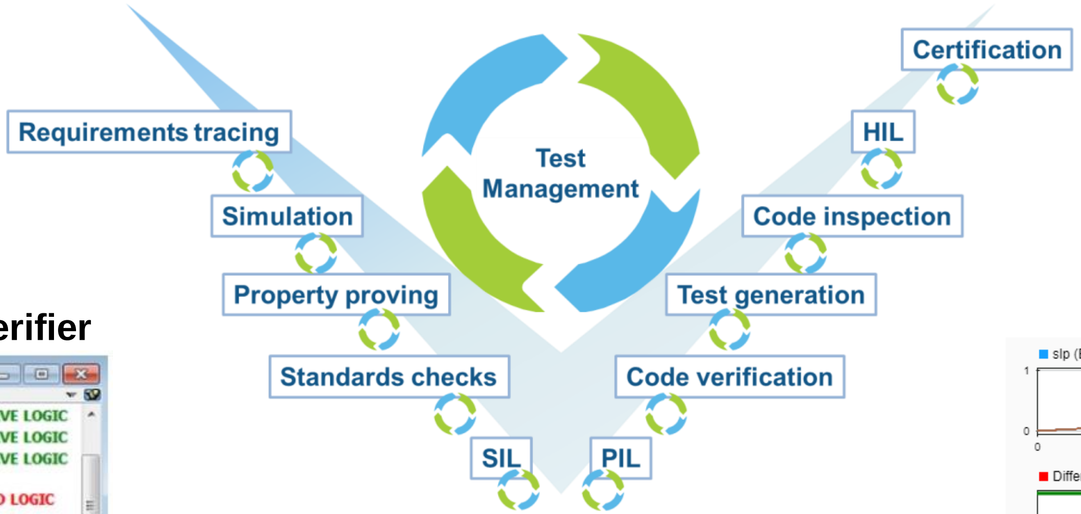
Products for the entire workflow

Simulink Requirements R2017b

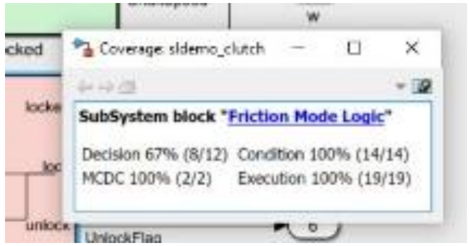


Summary | Implemented | Verified

Driver Switch Request Handling
Switch precedence
Avoid repeating commands
Long Switch recognition
Cancel Switch Detection
Set Switch Detection
Enable Switch Detection
Resume Switch Detection
Increment Switch Detection



Simulink Coverage R2017b

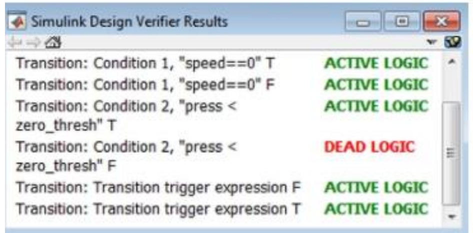


Coverage: sldemo_clutch

SubSystem block "Friction Mode Logic"

Decision 67% (8/12) Condition 100% (14/14)
MCDC 100% (2/2) Execution 100% (19/19)

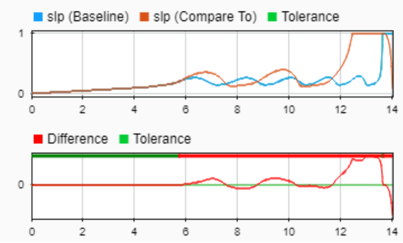
Simulink Design Verifier



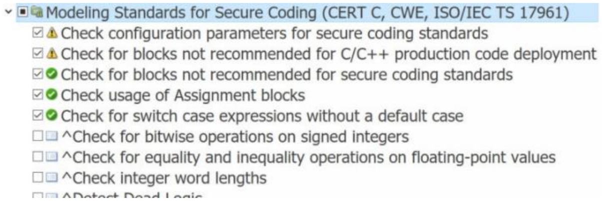
Simulink Design Verifier Results

```
Transition: Condition 1, "speed==0" T           ACTIVE LOGIC
Transition: Condition 1, "speed==0" F           ACTIVE LOGIC
Transition: Condition 2, "press <               ACTIVE LOGIC
zero_thresh" T
Transition: Condition 2, "press <               DEAD LOGIC
zero_thresh" F
Transition: Transition trigger expression F     ACTIVE LOGIC
Transition: Transition trigger expression T     ACTIVE LOGIC
```

Simulink Test

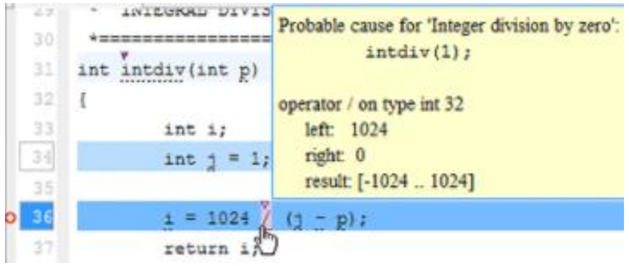


Simulink Check R2017b



- ■ Modeling Standards for Secure Coding (CERT C, CWE, ISO/IEC TS 17961)
  - ☑ ⚠ Check configuration parameters for secure coding standards
  - ☑ ⚠ Check for blocks not recommended for C/C++ production code deployment
  - ☑ ✓ Check for blocks not recommended for secure coding standards
  - ☑ ✓ Check usage of Assignment blocks
  - ☑ ✓ Check for switch case expressions without a default case
  - ☐ ^Check for bitwise operations on signed integers
  - ☐ ^Check for equality and inequality operations on floating-point values
  - ☐ ^Check integer word lengths
  - ☐ ^Detect Dead Logic

Polyspace



```
 *  INTEGRAL DIVIS
 *=================
int intdiv(int p)
{
        int i;
        int j = 1;

        i = 1024 / (j - p);
        return i;
```

Probable cause for 'Integer division by zero':
intdiv(1);

operator / on type int 32
left: 1024
right: 0
result: [-1024 .. 1024]

now supports
AUTOSAR
R2018a

Platform Productivity

Workflow Depth

Application Breadth

- Deployment of MATLAB Algorithms and Applications
- Code Generation from Simulink Models
- Verification and Validation

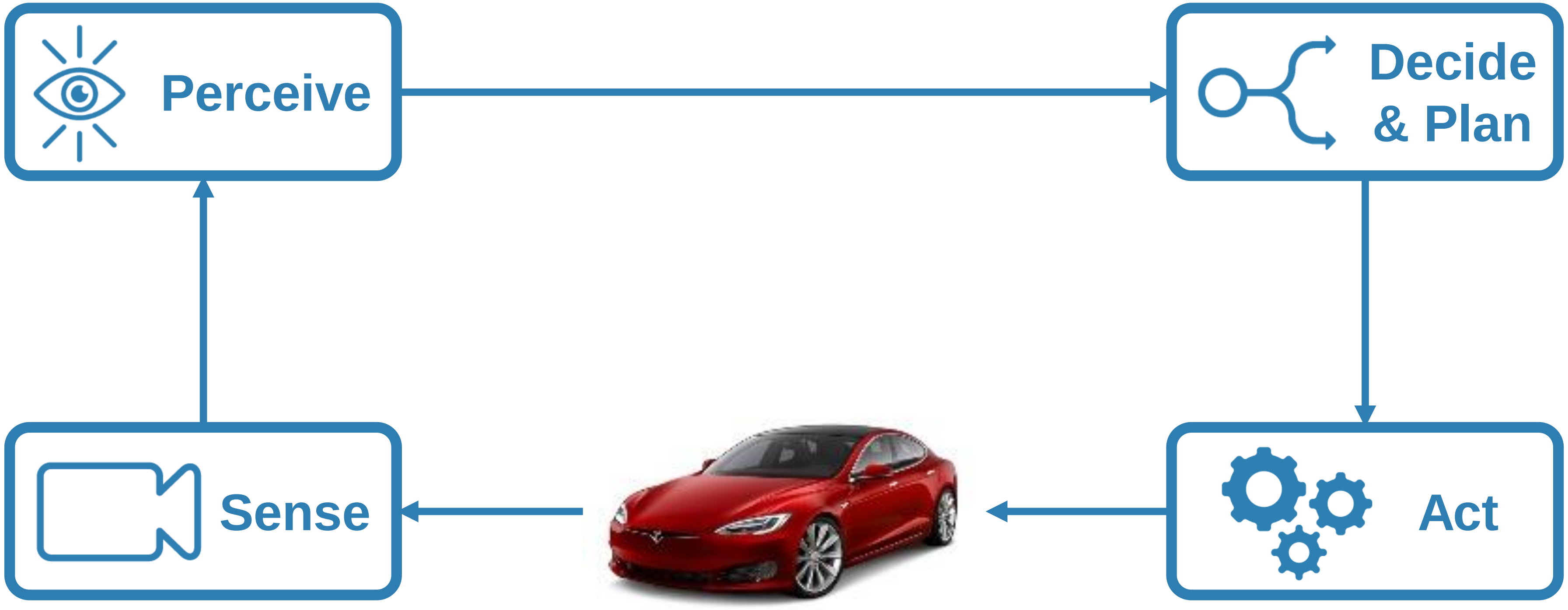
Platform Productivity

Workflow Depth

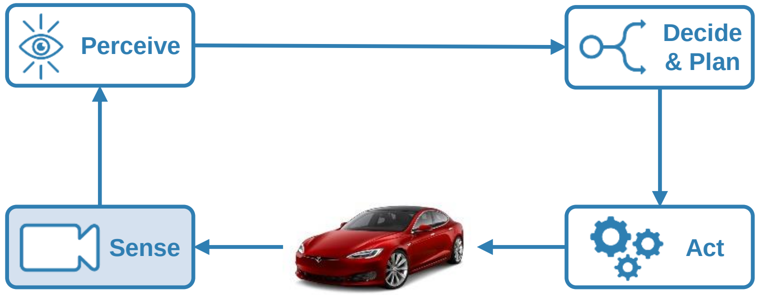
Application Breadth

- Autonomous Systems
- Wireless Communications
- Artificial Intelligence (AI)

Designing Autonomous Systems

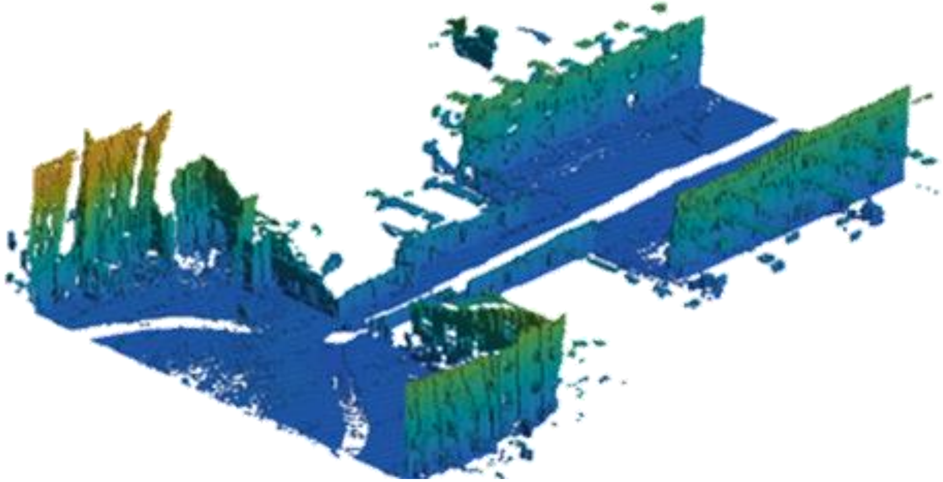


Designing Autonomous Systems



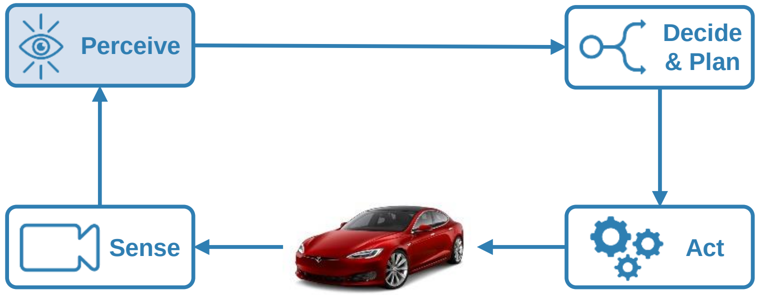
Mapping of environments using sensor data

- Segment and register lidar point clouds
- Lidar-Based SLAM: Localize robots and build map environments using lidar sensors



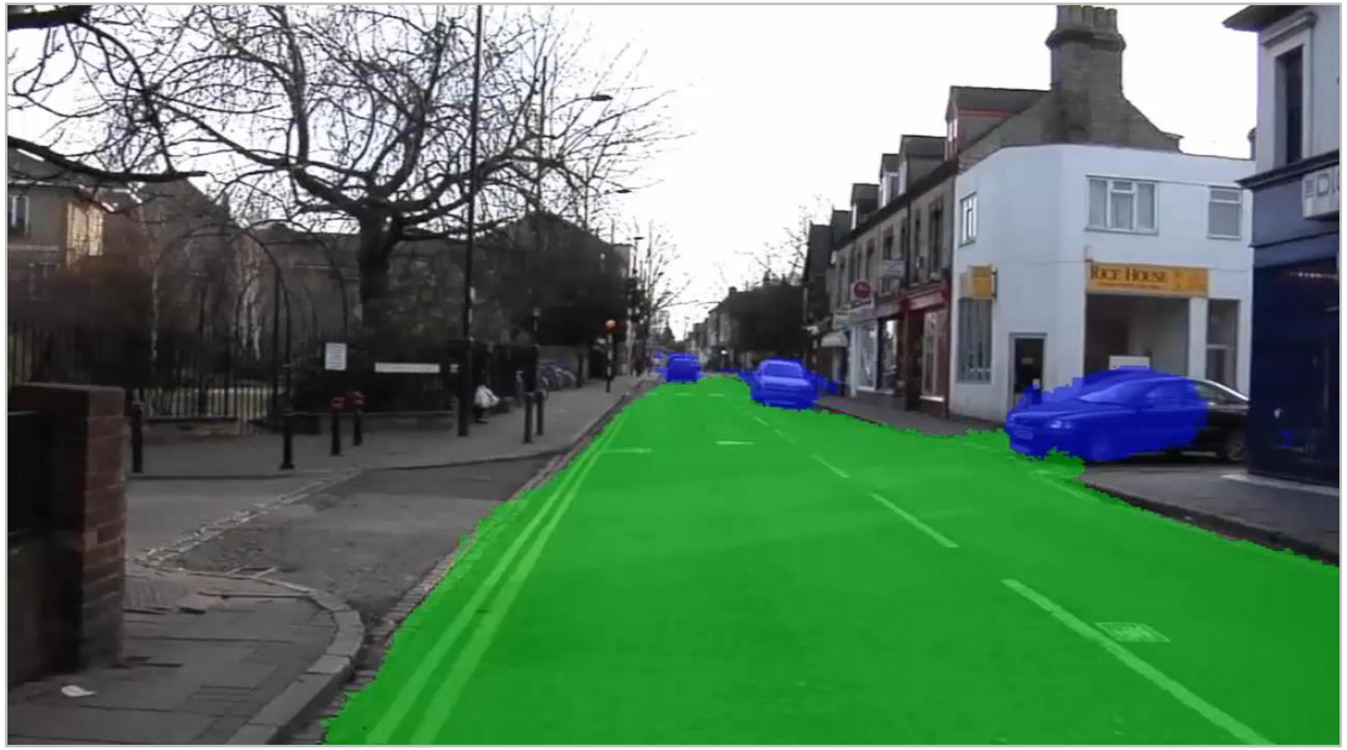
Computer Vision System Toolbox
Robotics System Toolbox

Designing Autonomous Systems



Understanding the environment using computer vision and deep learning techniques

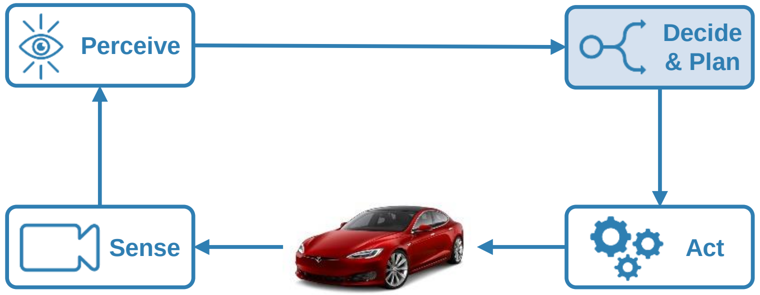
- Object detection and tracking
- Semantic segmentation using deep learning



CamVid Database: Brostow, Gabriel J., Julien Fauqueur, and Roberto Cipolla. "Semantic object classes in video: A high-definition ground truth database." *Pattern Recognition Letters*Vol 30, Issue 2, 2009, pp 88-97.

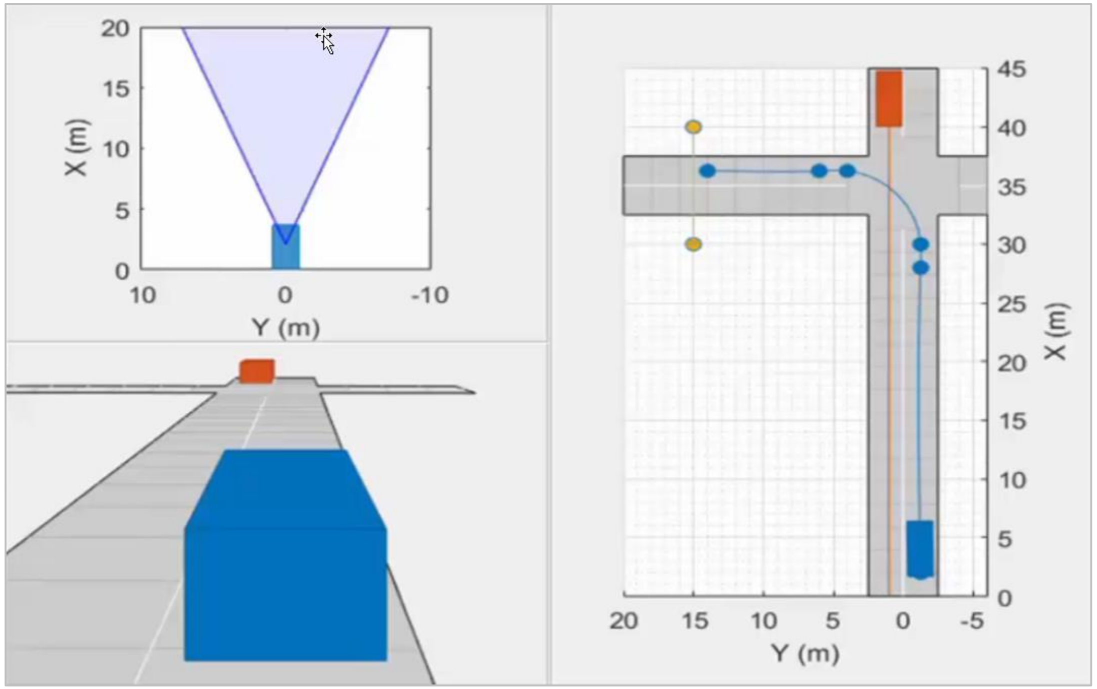
Neural Network Toolbox
Computer Vision System Toolbox
Automated Driving System Toolbox

Designing Autonomous Systems



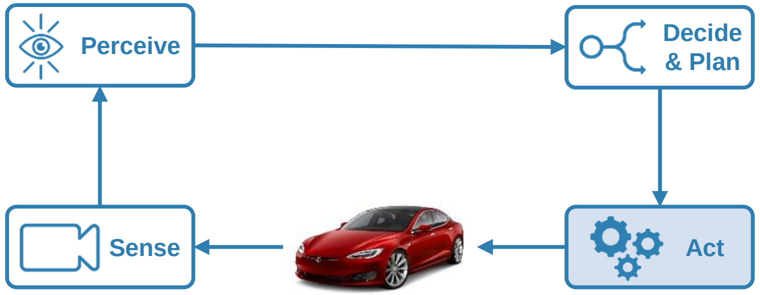
Design synthetic driving scenarios to test controllers and sensor fusion algorithms

- Interactively design synthetic driving scenarios composed of roads and actors *(vehicles, pedestrians, etc.)*
- Generate visual and radar detections of actors



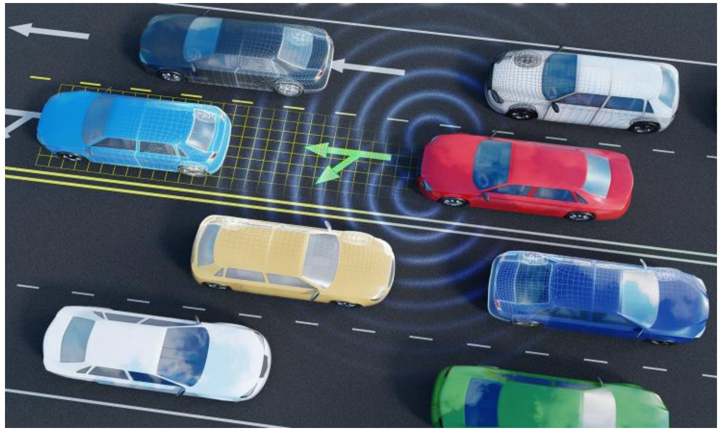
Driving Scenario Designer App

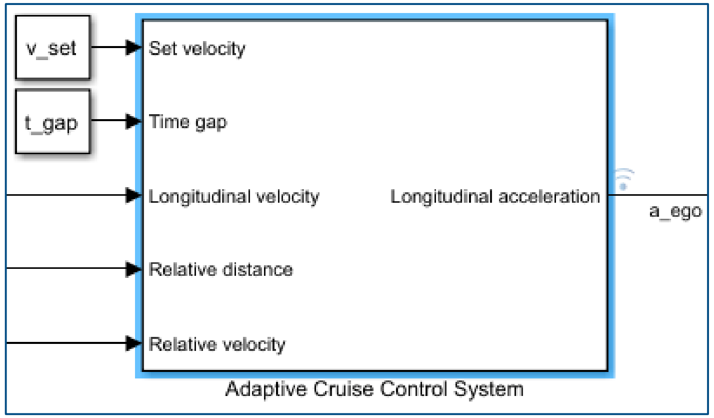
Designing Autonomous Systems

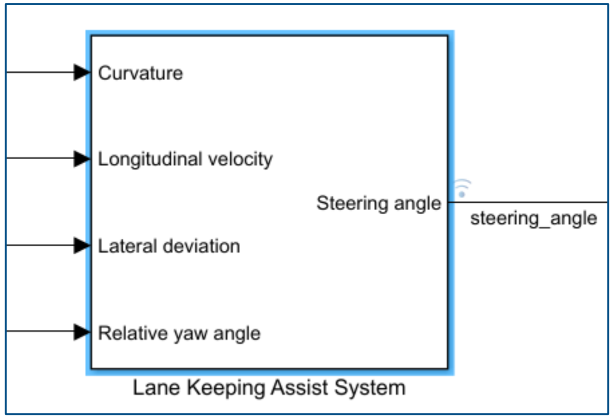


Model predictive control for adaptive cruise control and lane-keeping algorithms

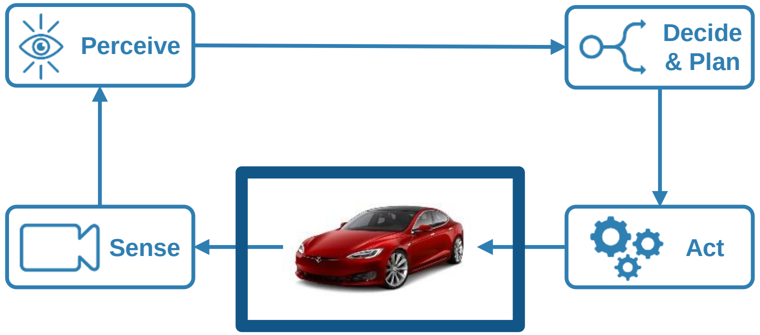
- Use prebuilt blocks instead of starting from scratch
- Simplified application-specific interfaces for configuring model predictive controllers
- Flexibility to customize for your application







Full Vehicle Simulation



Ride & handling

Chassis controls

Automated Driving

Vehicle Dynamics Blockset New Product

Design with the Latest Wireless Standards

Lte Advanced Pro™

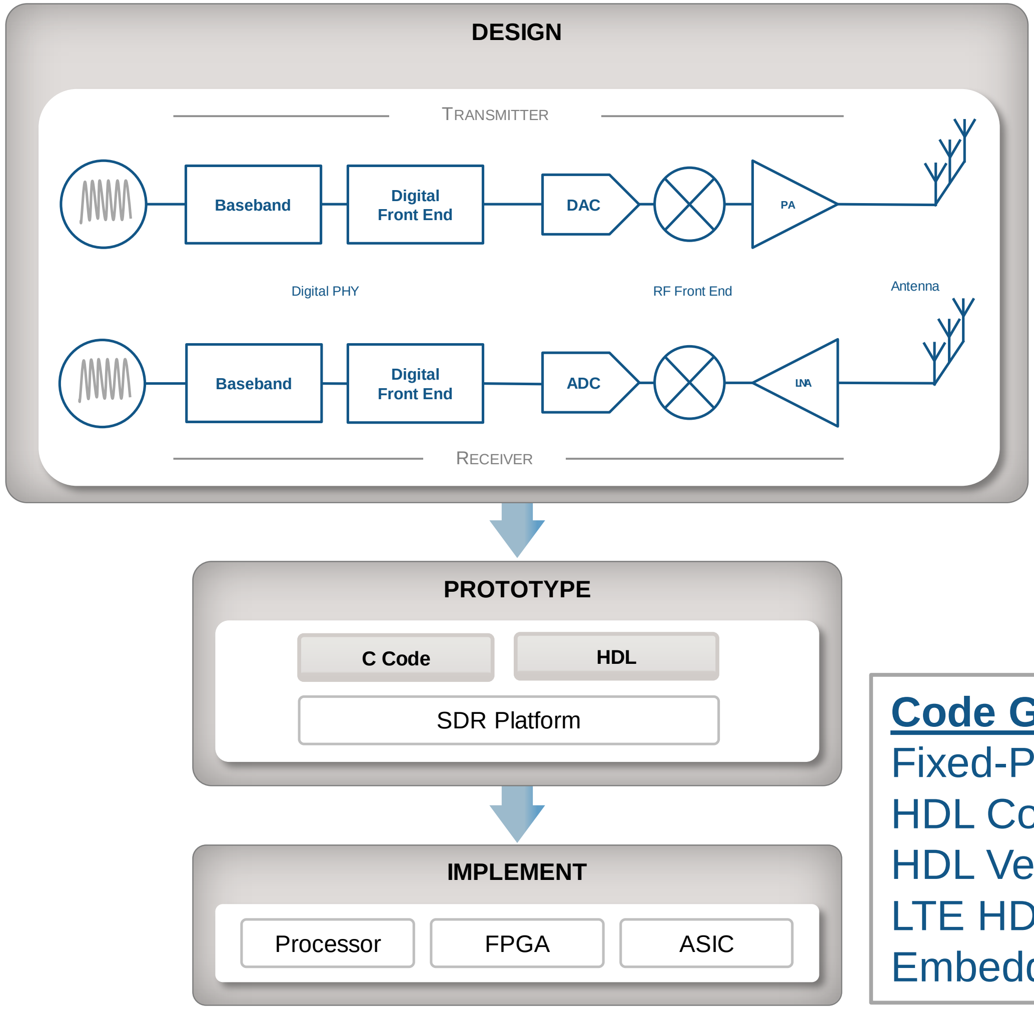
5G

Wi Fi™
802.11ax

ZigBee®

NB-IoT

Model-Based Design for Wireless Communications



DESIGN

TRANSMITTER

Baseband → Digital Front End → DAC → PA → Antenna

Digital PHY

RF Front End

Antenna

Baseband → Digital Front End → ADC → LNA → Antenna

RECEIVER

PROTOTYPE

C Code

HDL

SDR Platform

IMPLEMENT

Processor

FPGA

ASIC

- ➢ **Algorithm Design and Verification**
- ➢ **RF, Digital and Antenna Co-Design**
- ➢ **System Verification and Testing**
- ➢ **Rapid Prototyping and Production**

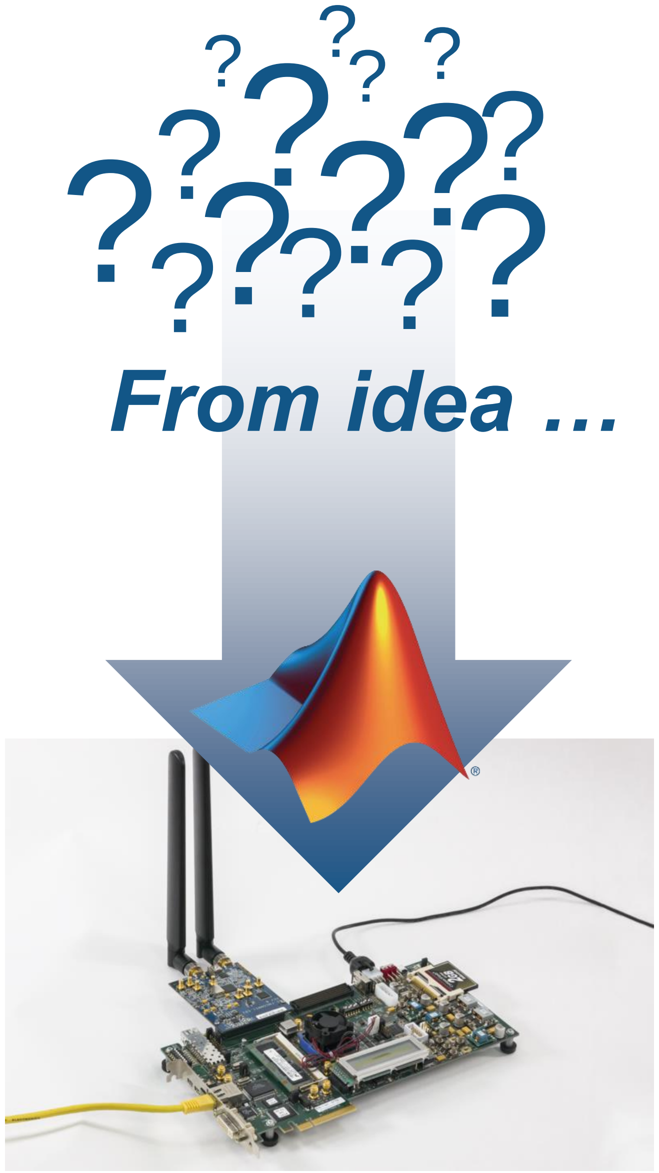
Code Generation and Verification

Fixed-Point Designer
HDL Coder
HDL Verifier
LTE HDL Toolbox **R2017b**
Embedded Coder

RF and Antenna Design and Prototyping

Use RF and Antenna models through your entire development cycle

- RF top-down design with RF Budget Analyzer app
- Adaptive hybrid beamforming and MIMO system modeling
- RF Power Amplifier modeling and DPD linearization
- RF propagation and 3D terrain visualization
- Design and fabrication of printed (PCB) antennas



From idea …

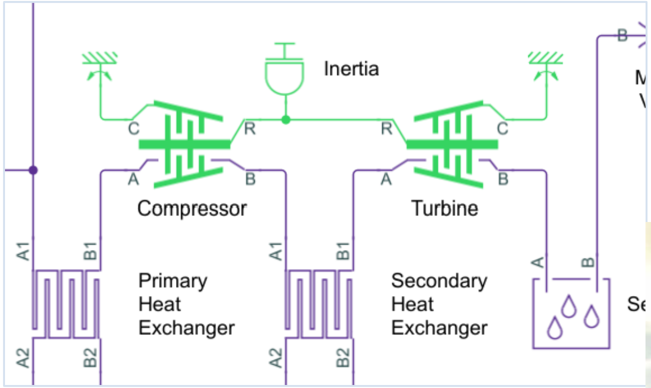
… to implementation

Antenna Toolbox
RF Toolbox
RF Blockset

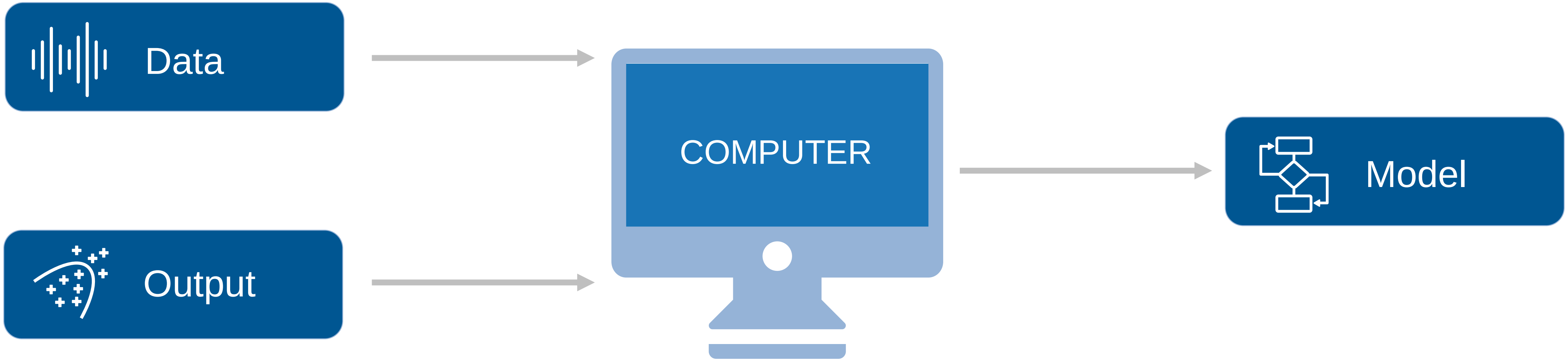
Model Moist Air Systems

Model HVAC and environmental control systems

- Model and simulate HVAC systems for a plant, such as a building, automobile, aircraft
- New library contains chambers, reservoirs, local restrictions, energy converters, sources and sensors
- Ensure acceptable temperature, pressure, humidity, condensation within the environment
- Note for Simscape in general: Run simulations about 5x faster with local solver option



Artificial Intelligence



Data

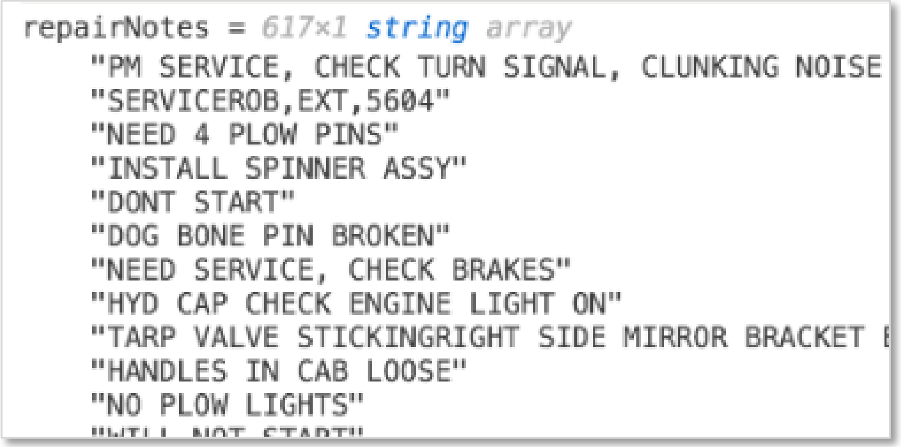
Output

COMPUTER

Model

Text Analytics

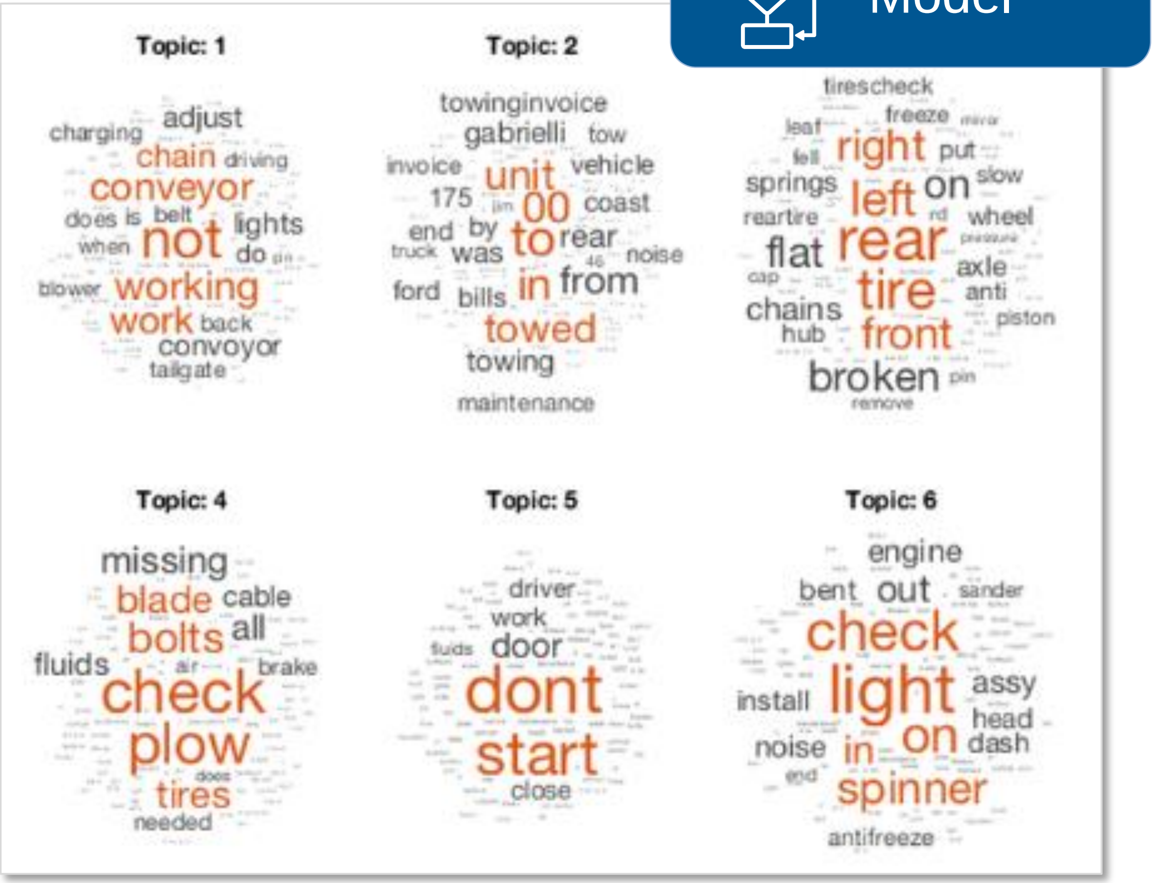
Data



```
repairNotes = 617×1 string array
    "PM SERVICE, CHECK TURN SIGNAL, CLUNKING NOISE
    "SERVICEROB,EXT,5604"
    "NEED 4 PLOW PINS"
    "INSTALL SPINNER ASSY"
    "DONT START"
    "DOG BONE PIN BROKEN"
    "NEED SERVICE, CHECK BRAKES"
    "HYD CAP CHECK ENGINE LIGHT ON"
    "TARP VALVE STICKINGRIGHT SIDE MIRROR BRACKET E
    "HANDLES IN CAB LOOSE"
    "NO PLOW LIGHTS"
    "WILL NOT START"
```

Output

Model

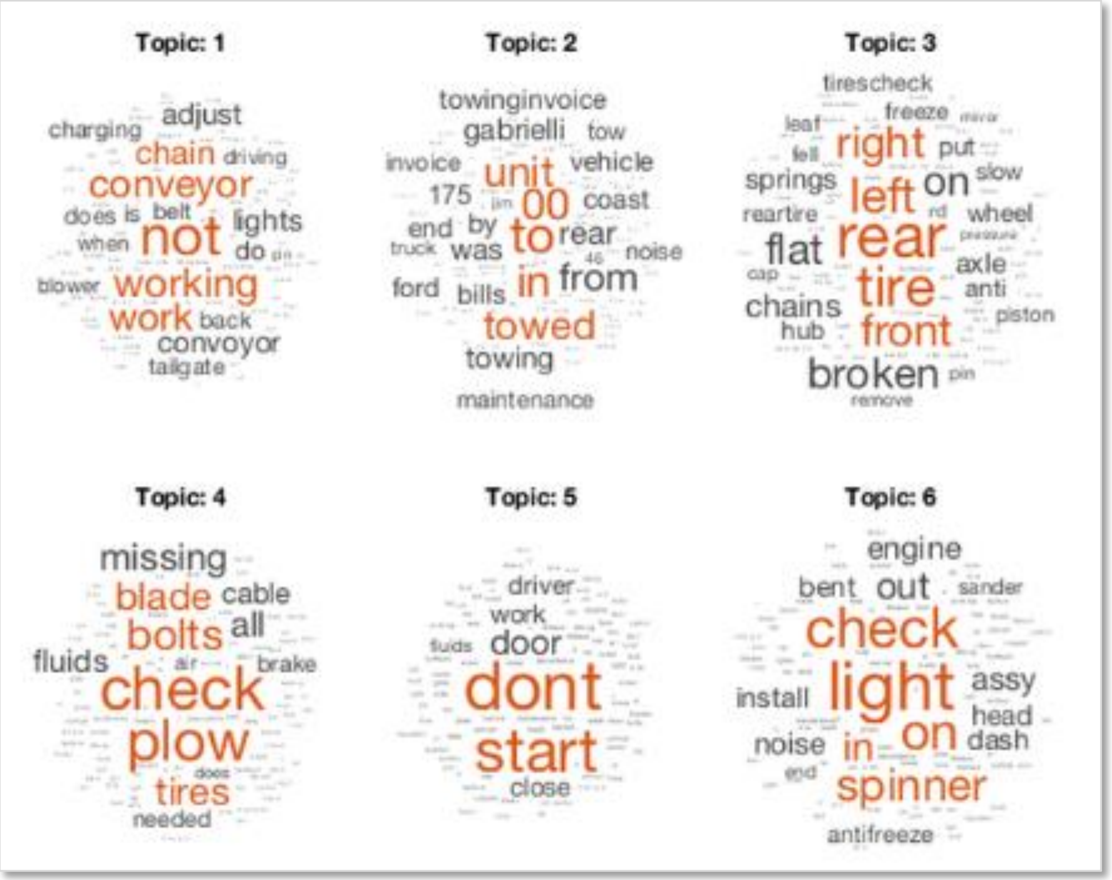


Text Analytics Toolbox

Text Analytics

Work with text from equipment logs and operator reports

- **Preprocess** raw text data by extracting, filtering, and splitting
- **Visualize** text using word clouds and text scatter plots
- **Develop** predictive models using built-in machine learning algorithms (LDA, LSA, word2vec)

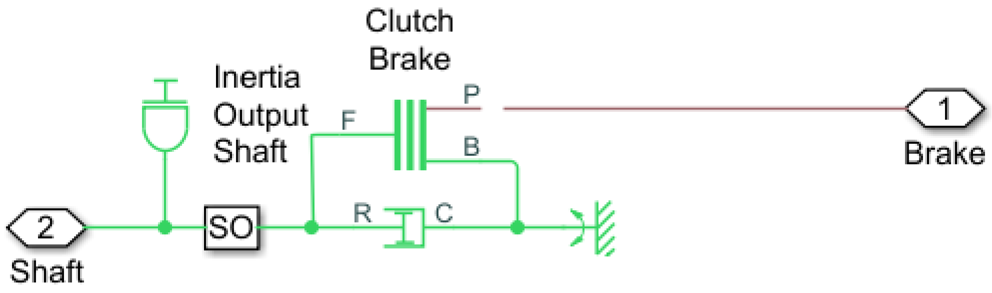


Text Analytics Toolbox

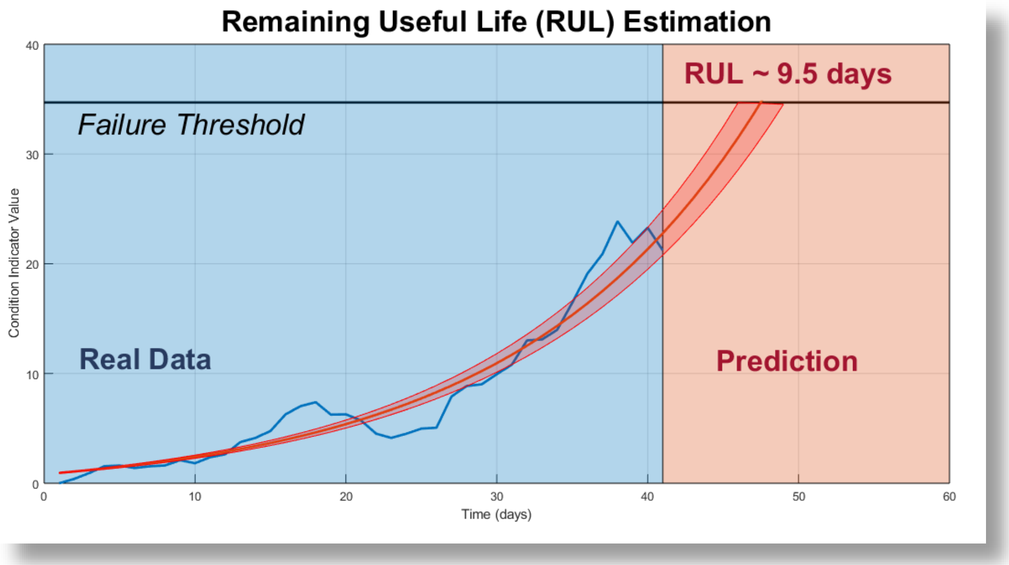
Predictive Maintenance

Data

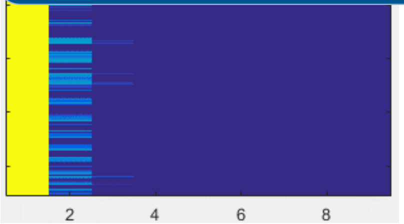
Sensors



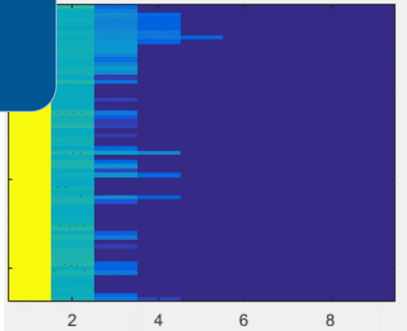
Model



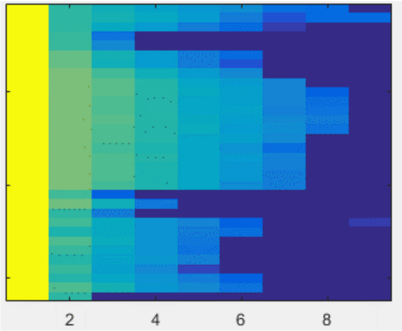
Output



Normal Operation



Monitor Closely



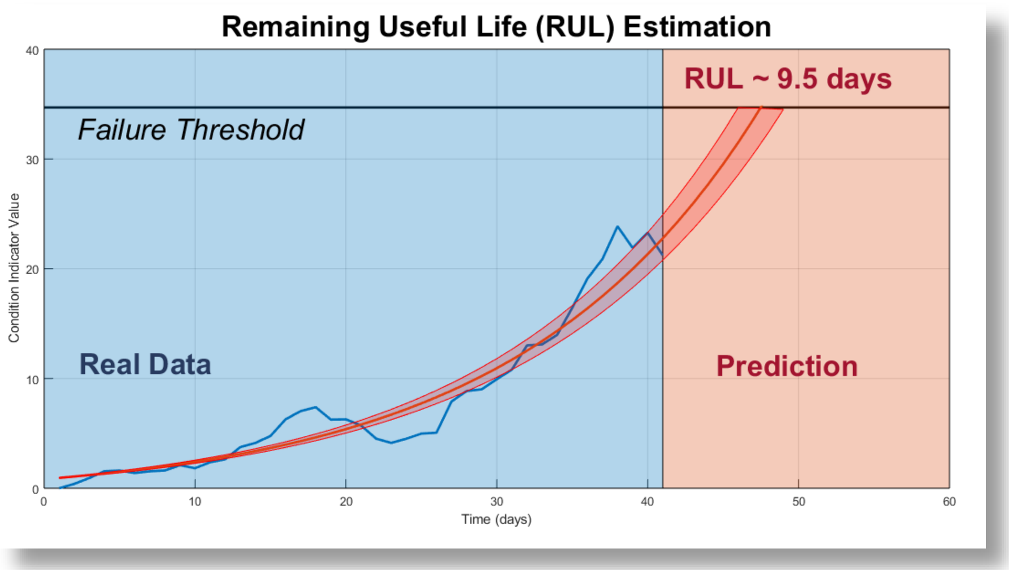
Maintenance Needed

Predictive Maintenance Toolbox New Product

Predictive Maintenance

Design and test condition monitoring and predictive maintenance algorithms

- Import sensor data from local files and cloud storage *(Amazon S3, Windows Azure Blob Storage, and Hadoop HDFS)*
- Use simulated failure data from Simulink models
- Estimate remaining useful life (RUL)
- Get started with examples *(motors, gearboxes, batteries, and other machines)*

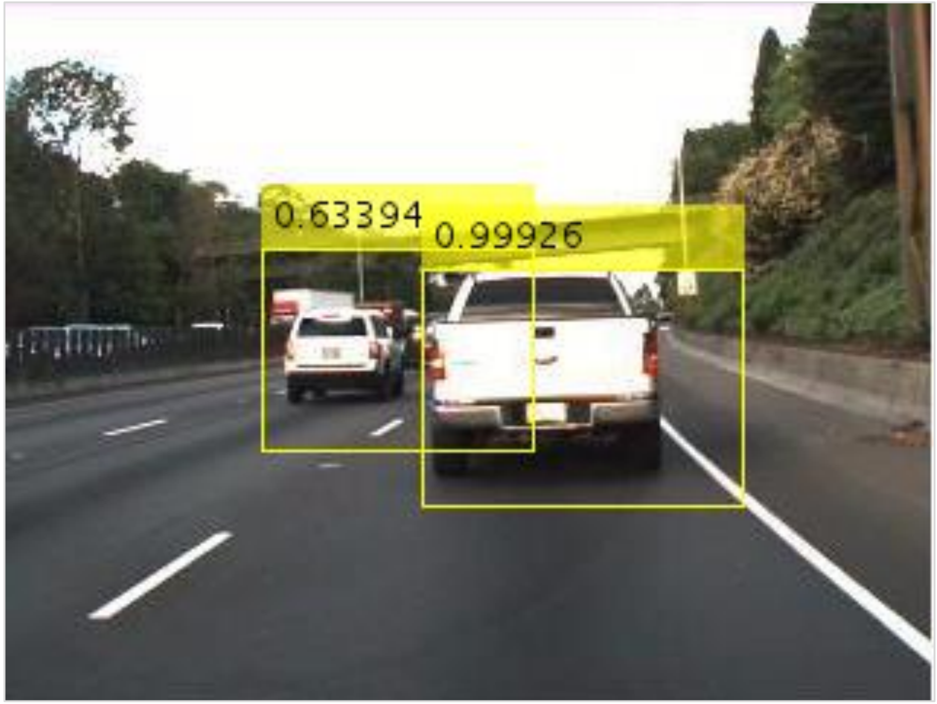


Predictive Maintenance Toolbox New Product

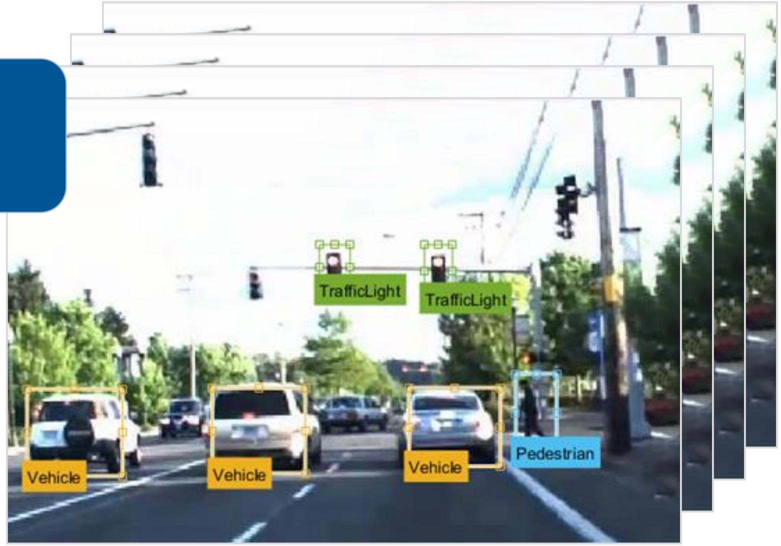
Deep Learning

Data

Model



Output

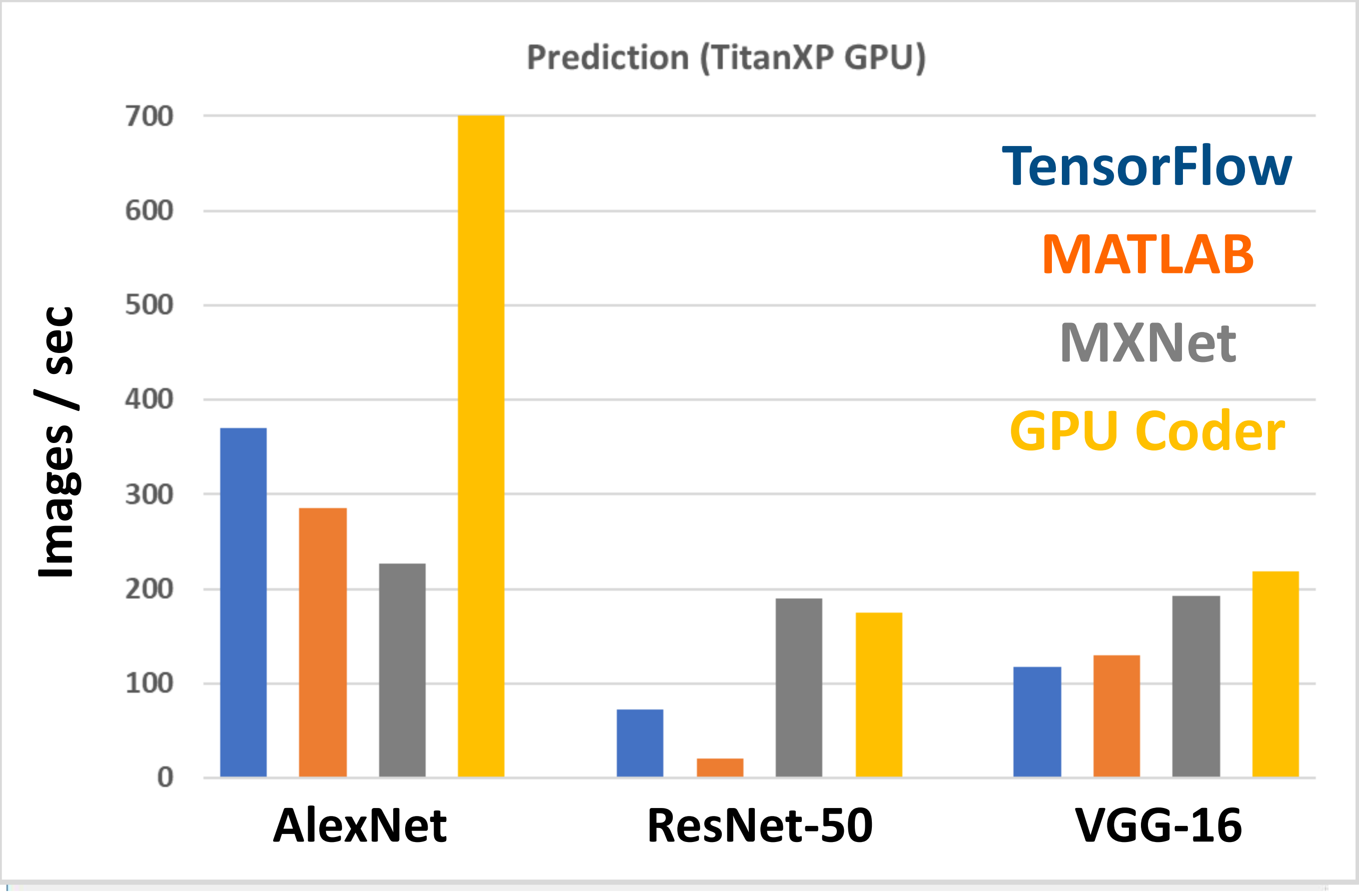


Neural Network Toolbox
Computer Vision System Toolbox
GPU Coder

Deep Learning

Design, build, and visualize convolutional neural networks

- Access the latest models
- Import pretrained models and use transfer learning
- Automate ground-truth labeling using apps
- Design and build your own models
- Use NVIDIA GPUs to train your models
- Automatically generate high-performance CUDA code for embedded deployment

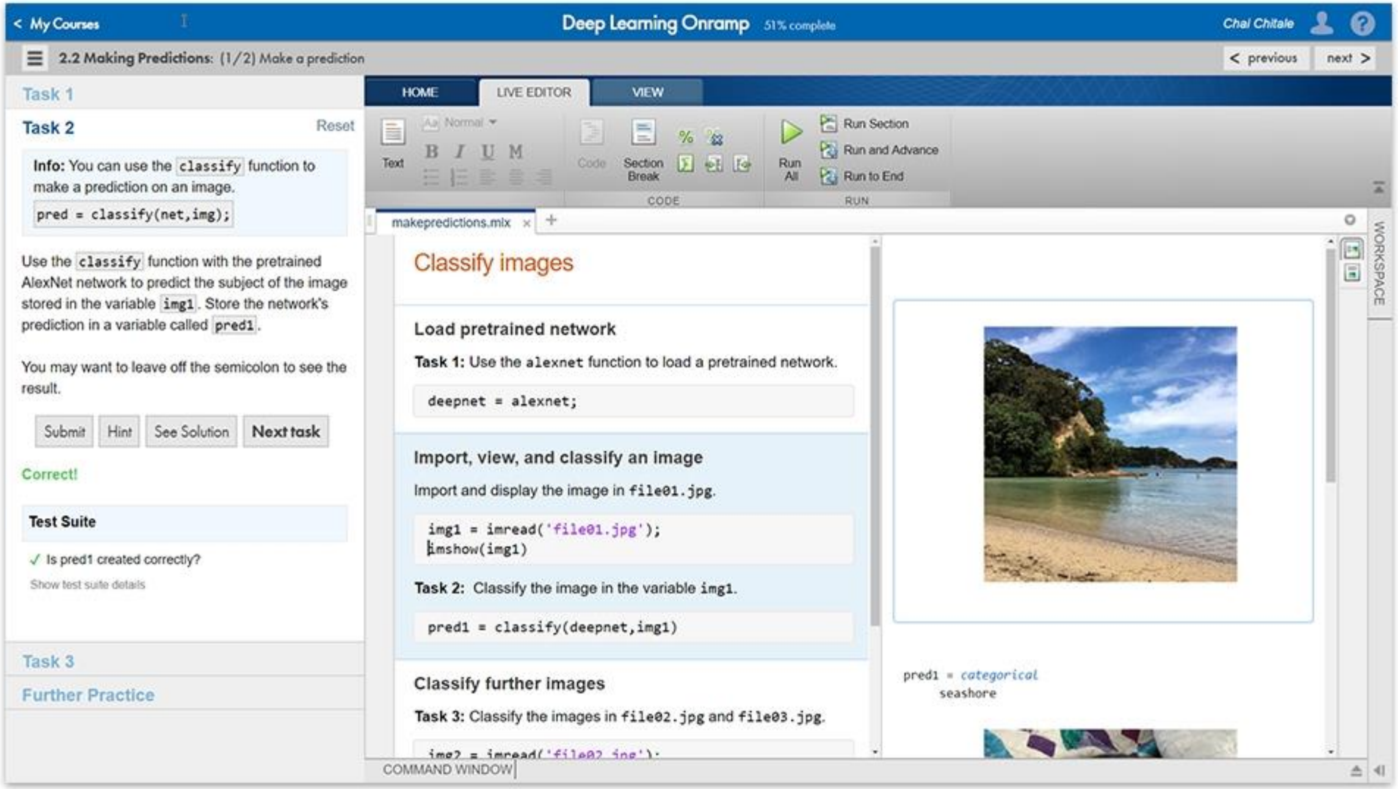


Neural Network Toolbox
Computer Vision System Toolbox
GPU Coder

FREE

Learn to Use MATLAB for Deep Learning in 2 Hours

Launch Deep Learning Onramp



Info: You can use the `classify` function to make a prediction on an image.

```
pred = classify(net,img);
```

Use the `classify` function with the pretrained AlexNet network to predict the subject of the image stored in the variable `img1`. Store the network's prediction in a variable called `pred1`.

You may want to leave off the semicolon to see the result.

Correct!

Test Suite

✓ Is pred1 created correctly?

Show test suite details

Classify images

Load pretrained network

Task 1: Use the `alexnet` function to load a pretrained network.

```
deepnet = alexnet;
```

Import, view, and classify an image

Import and display the image in `file01.jpg`.

```
img1 = imread('file01.jpg');
imshow(img1)
```

Task 2: Classify the image in the variable `img1`.

```
pred1 = classify(deepnet,img1)
```

Classify further images

Task 3: Classify the images in `file02.jpg` and `file03.jpg`.

```
img2 = imread('file02.jpg');
```

```
pred1 = categorical
     seashore
```

What’s New in MATLAB and Simulink?

Platform Productivity

- Design Creation
- Analysis
- Simulation, Scaling
- Collaboration

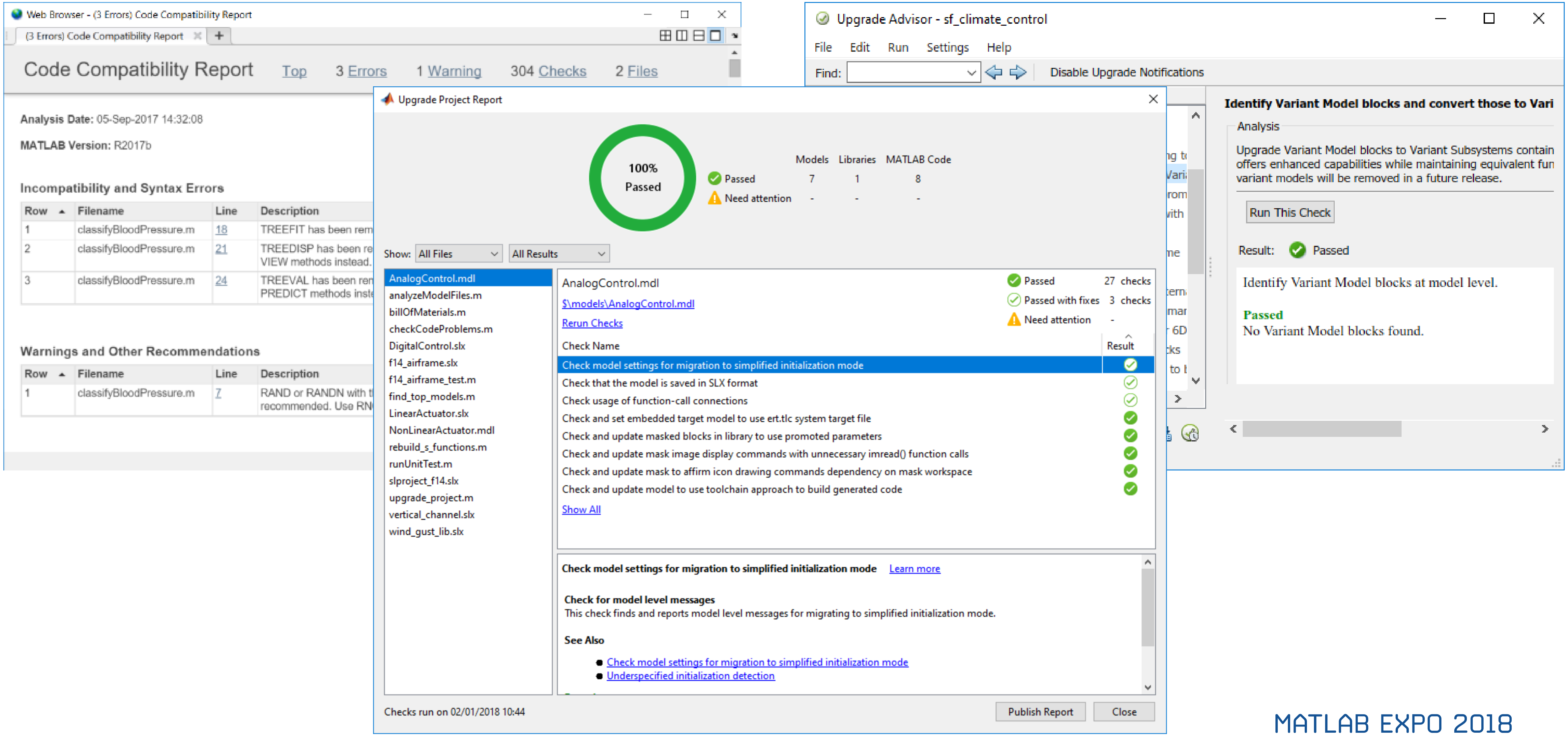
Workflow Depth

- Deployment
- Code Generation
- Verification and Validation

Application Breadth

- Autonomous Systems
- Wireless Communications
- Artificial Intelligence (AI)

Upgrade your MATLAB Code and Simulink Models



Web Browser - (3 Errors) Code Compatibility Report
(3 Errors) Code Compatibility Report
Code Compatibility Report
Top
3 Errors
1 Warning
304 Checks
2 Files

Analysis Date: 05-Sep-2017 14:32:08

MATLAB Version: R2017b

Incompatibility and Syntax Errors

Row	Filename	Line	Description
1	classifyBloodPressure.m	18	TREEFIT has been rem
2	classifyBloodPressure.m	21	TREEDISP has been re VIEW methods instead.
3	classifyBloodPressure.m	24	TREEVAL has been ren PREDICT methods inste

Warnings and Other Recommendations

Row	Filename	Line	Description
1	classifyBloodPressure.m	7	RAND or RANDN with t recommended. Use RN

	Models	Libraries	MATLAB Code
✓ Passed	7	1	8
⚠ Need attention	-	-	-

Show: All Files | All Results

AnalogControl.mdl

$\models\AnalogControl.mdl

Rerun Checks

✓ Passed 27 checks
✓ Passed with fixes 3 checks
⚠ Need attention -

Check Name	Result
Check model settings for migration to simplified initialization mode	✓
Check that the model is saved in SLX format	✓
Check usage of function-call connections	✓
Check and set embedded target model to use ert.tlc system target file	✓
Check and update masked blocks in library to use promoted parameters	✓
Check and update mask image display commands with unnecessary imread() function calls	✓
Check and update mask to affirm icon drawing commands dependency on mask workspace	✓
Check and update model to use toolchain approach to build generated code	✓

Show All

Check model settings for migration to simplified initialization mode Learn more

Check for model level messages
This check finds and reports model level messages for migrating to simplified initialization mode.

See Also

- Check model settings for migration to simplified initialization mode
- Underspecified initialization detection

Checks run on 02/01/2018 10:44

Publish Report
Close
Upgrade Advisor - sf_climate_control
File
Edit
Run
Settings
Help
Find:
Disable Upgrade Notifications

Identify Variant Model blocks and convert those to Vari

Analysis

Upgrade Variant Model blocks to Variant Subsystems contain offers enhanced capabilities while maintaining equivalent fun variant models will be removed in a future release.

Result: ✓ Passed

Identify Variant Model blocks at model level.

Passed
No Variant Model blocks found.

MATLAB EXPO 2018