

# Undocumented Matlab

unbelievable features; unbelievable quality; unbelievable cost effectiveness; unbelievable service

## MATLAB OBJECT ORIENTED PROGRAMMING (OOP)

### 1-DAY SEMINAR

#### 1. Introduction to MATLAB OOP (MCOS)

- a. Comparing paradigms: OOP vs. procedural programming
- b. Importance of OOP for development and maintainability
- c. MATLAB OOP is gaining momentum; MATLAB code is increasingly using OOP
- d. Benefits and drawbacks of MATLAB OOP (MCOS)
- e. MATLAB OOP's historic evolution and future outlook



#### 2. Object-Oriented MATLAB Programming

- a. Components of MATLAB OOP:
  - packages
  - classes
  - properties
  - methods
  - events and callbacks
- b. The format of a Matlab class
- c. Handle vs. value classes
- d. Accessibility attributes
- e. Specifying property data types/signature

#### Summary

A 1-day advanced Matlab seminar.

You will learn how to:

- create high-quality, maintainable Matlab programs
- use the modern object-oriented programming paradigm, replacing “spaghetti code”
- participate in a guided classroom project, gaining hands-on experience

#### 3. Advanced OOP programming

- a. Property setter and getter methods
- b. Static classes
- c. The singleton design pattern
- d. Object pooling
- e. Enumeration
- f. Class introspection
- g. Runtime performance aspects
- h. Coding conventions and best practices

#### Target audience

Matlab users of any level, from beginners to advanced, who wish to improve their program's maintainability and usability.

Basic familiarity with Matlab environment and coding/programming is assumed.

#### 4. Guided classroom project

- a. Create a data-structure container class
- b. One-on-one guidance and assistance
- c. Hands-on experience, directly relates to the presented material
- d. Discuss design alternatives, as affected by the project requirements
- e. On-going instructor feedback and suggestions on programming quality, efficiency, robustness, maintainability, and performance
- f. Phased development approach, under instructor guidance
- g. Project components encompass all the important OOP aspects
- h. The resulting code can easily be extended and reused later