FSI Machine Vision Course Catalog

Machine Vision is not a technology, it is a combination of dozens of disciplines and hundreds of technologies. Identifying and learning what matters, and un-learning common mis-conceptions usually takes many years or even decades. The highest quality training can allow someone to leap years ahead on this learning curve, and FSI's unique position in the field enables us to offer that caliber of training.

We're the North American headquarters, and lead experts on the continent for our European software and hardware partners. Our in-between scope of our Assured Path to Success program on applications means that we've solved (with full depth involvement) the toughest aspects of thousands of vision applications compared to more superficial involvement by component sales companies or much smaller numbers by full integrators. This experience informs our courses with both immense technical depth and also factory floor practical experience. FSI has been performing machine vision training since 1998 and factory automation training since 1959. We are a scientific, engineering and technology-oriented company; our lead instructors are engineers each with decades of experience in the machine vision field.

Course #

MVC-101 Introduction to machine vision

MVC-101 is a short, basic introduction to the main concepts, elements and terminology of machine vision. It is typically run for about 30 minutes just prior to another machine vision course where there are participants who have had no exposure to machine vision.

MVC-102 Machine vision and NeuroCheck overview seminar

This is a 2 hour seminar (not a training course). It is an introduction to machine vision and NeuroCheck software. The first part provides an overview of what machine vision actually is, and an overview on how it is accomplished. Common terminology and machine vision architectures are also covered. It also provides an outline of our "A Manager's Guide to Successful Machine Vision" roadmap which covers all areas important to the success of a machine vision application from inception through specification, solution, programming, startup and long term ownership.

The NeuroCheck portion of the seminar begins with an overview of the software, including the ways that it combines power with user-friendliness. It begins with top level navigation of the software including development and run modes. The nature of the "programming" process is shown, as well as quick development of user-screens. This is illustrated by doing an example in class from the beginning of the programming phase through run-time operation. The universal communication architecture is also covered.

Finally the seminar covers the place for machine vision in factory automation. It defines the strengths, weaknesses and parameters that determine the places and applications where machine vision provides substantial benefit.

MVC-103 EyeVision & machine vision overview seminar

This is a 2 hour seminar, which presents an introductory overview of all areas important to the success of a machine vision application from inception through long-term ownership. It includes an example project taken through inception, specification, solution, programming, startup, and long-term ownership, with the specific “nuts and bolts” of each step. In addition, an EyeVision based technology discussion. Machine vision equipment, technologies, tools, terminology, and concepts are also covered.

The course includes a description of the types of functions that machine can fulfill and accomplish, the strengths and weaknesses of machine vision and how they apply in manufacturing processes. Also includes A Manager’s Guide to Successful Machine Vision.

MVC-104 Machine vision and Zebra Aurora / Adaptive Vision software overview seminar

This is a 2 hour seminar, which presents an introductory overview of all areas important to the success of a machine vision application from inception through long-term ownership. The seminar Includes an example project taken through inception, specification, solution, programming, startup, and long-term ownership, with the specific “nuts and bolts” of each step. In addition, it includes an introduction to Adaptive Vision machine vision software and an overview of it's capabilities and its place in the machine vision landscape.

Machine vision equipment, technologies, tools, terminology, and concepts are also covered. The seminar includes a description of the types of functions that machine can fulfill and accomplish, the strengths and weaknesses of machine vision and how they apply in manufacturing processes. The seminar also includes A Manager’s Guide to Successful Machine Vision.

MVC-201 NeuroCheck & machine vision training course

This is our main and most popular NeuroCheck® course, which covers how to do automatic inspection applications using NeuroCheck-powered machine vision. This is a 1 3/4 day, “industrial strength” non-commercial course. Commonly used topics are covered in greater depth, and the more advanced or specialized topics are covered as shorter overviews. There is substantial focus on the use of NeuroCheck software, and brief highly condensed sections cover other areas (such as lighting, imaging and optics) that are crucial to project success. The standard course covers NeuroCheck software versions 6.0, 6.1 and 6.2. This course is also available for NeuroCheck version 5.1. Where applicable for the version, topics include:

- Basic setup and navigation of NeuroCheck® software for implementing machine vision applications
- NeuroCheck® software tools and their use, including image acquisition, asynchronous image acquisition, using NeuroCheck® ’s extensive range of standard filters or custom filters for image processing, creating / applying look-up tables to images, image thresholding, defining, processing, sorting, screening, counting regions of interest, template matching, thresholding, bar code reading, deriving object-level mathematical results, gauging, color processing, color classifications, Neural Net processor use, and Neural Classifier use. Creating and passing results of checks as ROI objects, image-level math, and other tools.
- Other NeuroCheck® system features which are utilized for machine vision applications. Password and multi-level security profiles. Creating and exporting spreadsheets and other output files and data, networking, check routine wizards, operating modes (manual, test, live and automatic) and their uses. Configuring the user interface / automatic mode screen. Use of self-documentation and annotation capabilities.
- Machine learning has been embedded in NeuroCheck and it's name for over 25 years. The course covers NeuroCheck's evolution of this into image-level Deep Learning.
- Implementation of example machine vision applications: Presence verification to check for proper assembly and forming of parts, character recognition, print quality inspection, robot guidance, pattern recognition, gauging, color analysis, surface analysis, and flaw detection.
- Hardware overview of machine vision systems powered by NeuroCheck. Includes various approaches utilizing FSI factory built pre-tested systems and pre-tested building blocks where compatibility issues have already been resolved. Overview of relevant image acquisition / camera specifications and selection including resolution, speed, and comparison of performance and operational characteristics of monochromatic, color and line-scan image acquisition. Brief overview of image acquisition, I/O hardware functions, plant-floor enclosure ratings, and relevant specifications.
- Overview of principles and implementation concepts for triggering, and high-speed image acquisition and parallel processing.

FSI Machine Vision™

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- The 4 methods of discrete I/O control: global, check level, tool level and combining flow control with I/O tool insertions.
- NeuroCheck software & license versions, media and administration.
- Introduction to NeuroCheck capabilities for unusual (non-default) program flow control, including non-sequential passage/linkage of input and output objects from and to tools, conditional branching, sub-programs, looping.
- Machine vision lighting purposes, principles, and implementation. This briefly distills and covers the key points of this important and extensive topic. It covers the objectives of machine vision lighting, and how they are often the opposite of just “lighting it up”. Next is an introduction to the fundamental illumination scenarios, their uses and how they are created. This includes the geometry of the workpiece, the imaging equipment and the lighting equipment, and the geometric relationship between these three. Includes a review of types of light sources that are inside lighting products, and the types and terminology of lighting products. Finally, techniques which combine all of the above principles are presented.
- Machine Vision lens types and selection. Standard and specialized lenses. Brief overview of this extensive topic.
- “Run” mode operation including design of user screens.
- Use of NeuroCheck's 4 types of trays: image, histogram, measurement list and ROI
- NeuroCheck 6.2/6.1/6.0 versions cover the universal I/O and data interchange architecture, including the data format converter and registers. Also, how this architecture allows seamless combination of a wide range of I/O and data interchange methods such as industrial busses, spreadsheets, SQL databases, files, and discrete/digital I/O.
- Introduction to Plug-Ins, and NeuroCheck Plug-In capabilities. How to install, enable, access and manage plug-ins.
- An overview and framework for successful machine vision project implementation. Strategies for mission and application definition that successfully fulfills the mission while avoiding unnecessary cost escalation. Feasibility studies, application review, review of scope questions and related implementation, and project management.

A thumb drive is provided which includes the applicable version(s) of the NeuroCheck software, training class handout, reference material, "further reading" technical documents, and training class electronic images. Printed copies of selected documents are also provided to each participant.

The duration of the MV-201 course is 1 ¾ days. Due to the large amount of material that will be covered, this is not a hands on course. This course is often immediately followed by MVC-204, a hands on NeuroCheck practice course.

MVC-204 Hands-On NeuroCheck practice

This is a ¾-day course with hands-on NeuroCheck programming practice. The course focuses on the more frequently used areas of NeuroCheck. MVC-201 is a pre-requisite for this course, and this course is usually run immediately after MVC-201. Includes extra coverage of those areas that are of greatest interest to the attendees. This practice embeds and completes recently covered material, and develops fluency and comfort with the software. For full hands-on participation, this course requires a notebook computer with permissions to install software and use a thumb drive. Otherwise partial hands-on participation is still available. A thumb drive with the relevant NeuroCheck software, example images for practice problems, and an assortment of publications is provided to each participant.

MVC-205 EyeVision and machine vision training course

This is our main and most popular EyeVision course, which covers how to do automatic inspection applications using EyeVision-powered machine vision. This is a 14 hour (1 ¾ day) "industrial strength" non-commercial course. Commonly used topics are covered in greater depth, and the more advanced or specialized topics are covered as overviews. There is substantial focus on the use of EyeVision software, and highly condensed sections cover other areas that are crucial to project success. Topics include:

- Brief general overview of machine vision technologies, architectures, evolution, and purposes.
- An overview and framework for successful machine vision project implementation. Strategies for mission and application definition that successfully fulfills the mission while avoiding unnecessary cost escalation. Feasibility studies, application review, review of scope questions and related implementation, and project management.
- Basic setup and navigation of EyeVision® software for implementing machine vision applications.
- EyeVision® software tools and their use, including image acquisition, asynchronous image acquisition, using EyeVision® 's standard filters or custom filters for image processing, image thresholding, defining, processing, sorting, screening, counting regions of Interest, template matching, thresholding, bar code reading, deriving object-level mathematical results (elsewhere), gauging color processing, and color classifications. Creating and passing results of tools as objects, image-level math, and other tools.
- Other EyeVision® system features which are utilized for machine vision applications. Creating and exporting output files and data, networking.
- Implementation of example machine vision applications: Presence verification to check for proper assembly and forming of parts, character recognition, print quality inspection, robot guidance, pattern recognition, gauging, color analysis, surface analysis, and flaw detection.
- The methods of discrete I/O control.
- EyeVision® software & license media and administration.
- Introduction to EyeVision® capabilities for unusual program flow control, including non-sequential passage/linkage of input and output objects from and to tools, sub-routines, and conditional branching
- Hardware overview of machine vision systems powered by EyeVision® utilizing FSI pre-tested systems and pre-tested building blocks where compatibility issues have already been resolved. Overview of relevant image acquisition / camera specifications and selection including resolution, speed, and comparison of performance and operational characteristics of monochromatic, color and line-scan image acquisition. Brief overview of image acquisition, I/O hardware functions, plant-floor enclosure ratings, and relevant specifications.
- Machine vision lighting purposes, principles, and implementation. This briefly distills and covers the key points of this important and extensive topic. It covers the objectives of machine vision lighting, and how they are often the opposite of just "lighting it up". Next is an introduction to the fundamental illumination scenarios, their uses and how they are created. This includes the geometry of the workpiece, the imaging equipment and the lighting equipment, and the geometric relationship between these three. Review of types of light sources that are inside lighting products, and the types and terminology of lighting products. Finally, examples are given which combine all of the above principles.
- Machine Vision lens types and selection. Standard and specialized lenses. Brief overview of this extensive topic.
- A thumb drive is provided to each participant containing the relevant EyeVision® software, training course images and various technical publications. The duration of the MVC-205 course is 1 ¾ days

This is the Primary EyeVision software course. It covers the commonly used aspects and tools of the EyeVision software in factory built vision units. Basic universal hardware aspects are covered, as well as a condensed overview

of other topics crucial to machine vision success (including lighting design and optics). This is a 1 ¾-day course

MVC-206 Zebra Aurora / Adaptive Vision and machine vision training course

This is our main and most popular Adaptive Vision® course, which covers how to do automatic inspection applications using Adaptive Vision-powered machine vision. This is a 1 3/4 day, “industrial strength” non-commercial course. Commonly used topics are covered in greater depth, and the more advanced or specialized topics are covered as overviews. There is substantial focus on the use of Adaptive Vision software, and highly condensed sections cover other areas (such as lighting, imaging and optics) that are crucial to project success.

Due to the large number of tools and capabilities in Adaptive Vision, the course uses our background to select and focus on the most commonly and broadly used tools and capabilities, and then covers how to find and learn about the others when needed.

A thumb drive is provided which includes the applicable version(s) of the Adaptive Vision software, training class handout, reference material, "further reading" technical documents, and training class electronic images. Printed copies of selected documents are also provided to each participant.

Course modules include:

- Arrays
- Filters
- Conditions and Connection Types
- Formulas
- Result Analysis
- Macrofilters
- Variant Macrofilters
- Advanced Macrofilters
- Generic filters
- Array Synchronization
- Handling Errors
- Project Explorer
- Human Machine Interface
- Finite State Machines
- Introduction to machine learning
- Anomaly Detection
- Feature Detection
- Object Classification
- Instance Segmentation
- Point Location
- 1D Edge Detection
- 3D Vision
- Blob Analysis

- Camera Calibration
- Local Coordinate Systems
- Optical Character Recognition
- Performance Optimization
- Region Analysis
- Shape Fitting
- Template Matching
- Toolsets
- Types of Data

The duration of the MVC-206 course is 1 ¾ days. Due to the large amount of material that will be covered, this is not a hands on course. This course is often immediately followed by MVC-219 a hands on Adaptive Vision practice course.

MVC-218 Hands on EyeVision practice course

This is a ¾-day course with hands-on EyeVision programming practice for approximately 10 basic applications. Includes extra coverage of those areas that are of greatest interest to the attendees. Also includes practice on other aspects of setup. Pre-requisites are MVC-205 and for full hands-on participation, a notebook computer with permissions to install software and use a thumb drive. Otherwise partial hands-on participation is still available.

A thumb drive with the relevant EyeVision software, example images for practice problems, and an assortment of publications is provided to each participant.

MVC-219 Hands-on Zebra Aurora / Adaptive Vision software practice

This is a ¾-day course with hands-on Adaptive Vision programming practice for approximately 10 basic applications. Includes extra coverage of those areas that are of greatest interest to the attendees. Also includes practice on other aspects of setup. Pre-requisites are MVC-206 and for full hands-on participation, a notebook computer with permissions to install software and use a thumb drive. Otherwise partial hands-on participation is still available.
A thumb drive with the relevant Adaptive Vision software, example images for practice problems, and an assortment of publications is provided to each participant.

MVC-221 Industrial machine vision course

This 2 -5 day course covers the machine vision principles, practices, programming, systems, hardware, software, applications, implementation, technologies, physics, and project management which are crucial to success. We belive that this is the best, most expert condensed all-around machine vision course available. The 5 day version includes all of the material from our MVC-230 "lighting" (illumination-related imaging solutions physics and geometry) course plus greater depth of coverage in all of the listed areas. The shorter (4, 3 and 2 day) variants cover the same material but in less depth, with more dept retained on the more crucial and heavily used areas.

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Overview of machine vision solutions and system architectures, configuration, and terminology.

Objectives, principles, and engineering of machine vision lighting and illumination. Machine vision lighting purposes, principles, and implementation. This is condensed into medium-length coverage of this important and extensive topic. It covers the objectives of machine vision lighting, and how they are often the opposite of just “lighting it up”. Next is brief coverage of the underlying physics including the wavelengths (visible, UV, IR, X-Ray) used for imaging. Next is an introduction to the fundamental illumination scenarios, their uses and how they are created. This includes the

geometry of the workpiece, the imaging equipment and the lighting equipment, and the geometric relationship between these three. Review of types of light sources that are inside lighting products, and the types and terminology of lighting products. Strengths, weaknesses, terminology, and application parameters of machine vision light sources. Finally, techniques are presented which combine all of the above principles.

Lenses and optics. Purpose, principles, types, specifications and selection. Standard, telecentric and pericentric optics. Optical transfer functions. Common uses and characteristics of mounting formats (for example, C,CS, F,S) . Fixed and variable focal length lenses.

“A Manager’s Guide to Successful Machine Vision”. Covers project inception through successful long-term ownership. This covers the “secrets” of the FSI “Assured Path to Success™” roadmap, which has doubled the success rate of machine vision applications from 50% to 100%. This includes development of an application specification optimized to reduce cost while accomplishing the require mission. It covers effective methods and sequencing of the other steps including selection of equipment and technologies, creation of the physical and programming solutions, testing and hardening, documentation and planning for successful long-term ownership.

Machine vision software and programming. This section uses example software engines to provide visuals and specifics in all of the covered areas. This class covers:

- Introduction to machine vision programming.
- Filter and lookup table Image processing tools
- Gauging (including high accuracy edge modeling, static and dynamic calibration, gauging rules), edge detection methods and algorithms and sub-pixeling resolution
- Gauging physics, software and accuracy optimization
- Color analysis, color spaces uses and translations, color image conversion and channel extractions
- Neural net, deep learning and machine-learning processing.
- Classification from deep learning and other techniques
- Image calibration and transformations
- Reading bar codes, data matrix codes and other 2D codes
- OCR (Optical Character Recognition) and OCV (Optical Character Verification) & Print quality inspection
- Robot guidance & process guidance. Bin picking.
- Surface analysis
- Template matching (Normalized correlation & geometric types)
- “Location” programming for inspection of products where the position and orientation varies
- Unrolling images, including image extraction of programmatically controlled area & orientation
- System level programming functions such as GUI’s,
- Discrete and data I/O. Interchange via. discrete / digital I/O, industrial busses and networks, SQL databases, spreadsheets and files.
- Security
- Documentation of the system & solution
- Image storage, including on triggered applications.
- Reference images and programming for recovery of x,y,z, yaw, pitch and roll alignment.
- Operating modes & high level software navigation

- Three dimensional image processing
- Program architecture including program flow and passage of parameters

Adaptation to the full range of line speeds using (where needed) direct hardware triggering, strobe synchronization and parallel processing.

Imaging and imaging resolution. Introduction imaging parameters and technologies. Progressive, interlaced, rolling asnf global shutter, area and line scan imaging processer covered. Gray scale, single and three chip color imaging. Brief coverage of imaging outside of the visible band including near-IR, IR, UV, UV florescence, and X-Ray. Introduction to spatial and array resolution.

Overview of the machine vision process at three levels:

- At the top level (which typically takes months or years) The overall project / initiative process. Starts with idea inception, through planing and successful execution, ending in long term successful ownership.
- At the mid level (which typically takes weeks or months) creation of a successful technical solution
- At the detailed level, the run-time execution cycle which may take only milliseconds

Adaptation to factory floor conditions. Protecting equipment and maintaining function of equipment in adverse environmental conditions.

Hyperspectral imaging concepts, teques and resultant 3 dimensional data cubes. Multi-spectral imaging

3D Imaging. Covers the various underlying technologies (e.g. time-of-flight, scanning / triangulation, grid and pseudo-random grid, styereoscopic) and their architecture, strengths, weaknesses and usage in machine vision.

Introduction to false rejects in automatic inspection systems. Analysis, including the relationship with zero defect automatic inspection. Strategies and specification.

Machine Vision accuracy and how to achieve it. Recognizing and avoiding common miss-conceptions and mis-statements. Sources of machine vision measurement errors and how to minimize them.

Deep learning and machine learning in machine vision.

The course does not cover the manufacture of machine vision units and systems, although it does cover the architecture of such. Nor does it cover lower (library and code) level machine vision programming.

MVC-223 Hands on supervised remote machine vision software practice

Supervised, structured remote programming practice to maintain proficiency after an FSI software training course. Prerequisite: FSI course on or basic programming knowledge on the software. FSI sends out example problems (including images) and then does an evaluation and feedback on the results. ult schedule is structured as a sequence of assignments tailored to the individual or group of individuals in every respect. If desired, completion / participation confirmation can be sent to a designated person at your company. The standard schedule is that this is done each January and July. Special customized versions are available.

MVC-230 Machine vision lighting, Illumination and solution physics course

Machine vision “lighting” is actually the design of the illumination and its interaction with the workpiece and imaging process to enable the programmatic solution. Weakness in handling this area is one of the two most common causes of unsuccessful machine vision applications.

This 2-day (16 hour) course provides solid foundation in the relevant physics and scientific areas and upon that foundation teaches the purpose, methods, technologies, equipment and physics of solving practical machine vision problems.. This includes all elements in the entire lighting solution “chain” relevant to this from generation of the illumination, transmittal to the workpiece, interaction with the workpiece, through processing elements such as optics to conversion to an electronic image. Coverage in each area is selected and weighted based on the end objective which is accomplishment of machine vision.

Examples of concepts covered:

- A foundation in the interaction between light and workpieces with respect to machine vision.
- Electromagnetic radiation and its uses for imaging. Coverage of bands of the spectrum used for imaging. For each band, coverage of the methods of generating illumination, useful interactions of it with the workpiece, bending, focusing and reflection and detection for imaging purposes.
- Common machine vision math, types, and units of mathematical measurements.
- “Lighting” as actually a spatial solution involving the lighting, the workpiece and the imaging system, with a purpose of creating reliable differentiation as needed for the intended imaging and programming approach.
- Identifying and avoiding common errors and misconceptions
- Characterization of light sources by parameters such as generation method, geometry of emissive area, long term stability, life expectancy, efficiency / heat generation, environmental tolerance, collimation, polarization, coherence, units of energy output and energy output density, cost, cycling and control capabilities. A discussion of the various choices and technologies within each of these parameters. Evaluation and selection strategies based on these parameters
- Methods of generating light and illumination. Attributes, strengths, weaknesses. LED, incandescent (including halogen) florescent, laser, gas discharge
- Filters.
- Coaxial on-axis
- Lighting / spatial solutions for common machine vision objectives.
- Unusual lighting solution strategies for special circumstances.
- Lighting strategies for ultra-high accuracy gauging, surface inspection, high speed processes, UV florescence for coating inspection
- Lasers for 2½D and 3D imaging and analysis.
- Computational imaging
- Conversion of light/illumination into electronic signals in the camera. This coverage is only as need for solution physics and does not cover cameras in general.
- Differences in lighting design for Deep Learning and Machine Learning based machine vision.

MVC-231 NeuroCheck introduction training for remote support

This short (3 hour) course covers basic familiarity and system administration to enable the participant to work with remote assistance from or enable remote efforts of a more highly trained individual. This course provides a basic introduction to NeuroCheck software, plus detailed coverage of the software areas to support work with remote assistance. System hardware relevant to that mission is also covered, including specifics if for an FSI NeuroCheck-powered unit on a specific project. The standard course covers versions 6.0, 6.1 and 6.2. A version which covers (only) version 5.1 is also available. Due to it's nature and brevity, this course is often run via a video GoTo meeting. The course includes a basic overview of:

- How to launch and navigate the software
- Project folder concept and architecture and how to operate with it.
- File structure and administration of programs, program-related objects, images, standard system, and customized system files. Backups.
- Top level navigation of the software and its main administration tools
- GUI introduction. Types of screens, including development and user screens, and navigation between them.
- How to load, select and launch remotely supplied programs
- How to store images, including organizing, naming and identification. This enables sending them out for remote programming or assistance.
- Operating modes and switching between them
- Relevant hardware topics using a typical FSI-built vision unit as an example.
- Showing development of a basic program. This is to provide basic visual familiarity and does not teach program development.
- Showing development of a basic user screen. This is to provide basic visual familiarity and does not teach user screen development.
- How to obtain a live image. On FSI built systems, intro how to adjust common user camera settings.
- Where applicable, all of the above (except for programming introduction) for deep learning software.

The course length is 3 hours. Due to the short length of the course, the most common format is via GoToMeeting video meeting, but it is also available to be run at your site or at or by an FSI facility.

MVC-232 EVT introduction training for remote support

This course provides a basic introduction to EVT software plus typical relevant system hardware architecture. This very short course covers basic familiarity and system administration to enable the participant to work with remote assistance from or enable remote efforts of a more highly trained individual. The course includes a basic overview of:

- How to launch and navigate the software
- File structure and administration of programs, program-related objects, images, standard system, and customized system files
- Top level navigation of the software and its main administration tools
- GUI introduction. Types of screens, including development and user screens, and navigation between them.
- How to load, select and launch remotely supplied programs
- How to store images, including organizing, naming and identification. This enables sending them out for remote programming or assistance.
- Operating modes and switching between them

- Relevant hardware topics using a typical FSI-built vision unit as an example.
- Showing development of a basic program. This is to provide basic visual familiarity and does not teach program development.
- Showing development of a basic user screen. This is to provide basic visual familiarity and does not teach user screen development.
- How to obtain a live image. On FSI built systems, intro how to adjust common user camera settings.
- Where applicable, all of the above (except for programming introduction) for deep learning software.

The course length is 3 hours. Due to the short length of the course, the most common format is via GoToMeeting video meeting, but it is also available to be run at your site or at or by an FSI facility.

MVC-233 Zebra Aurora / Adaptive Vision introduction training for remote support

This course provides a basic introduction to Adaptive Vision software plus typical relevant system hardware architecture. This very short course covers basic familiarity and system administration to enable the participant to work with remote assistance from or enable remote efforts of a more highly trained individual. The course includes a basic overview of:

- How to launch and navigate the software
- File structure and administration of programs, program-related objects, images, standard system, and customized system files
- Top level navigation of the software and its main administration tools
- GUI introduction. Types of screens, including development and user screens, and navigation between them.
- How to load, select and launch remotely supplied programs
- How to store images, including organizing, naming and identification. This enables sending them out for remote programming or assistance.
- Operating modes and switching between them
- Relevant hardware topics using a typical FSI-built vision unit as an example.
- Showing development of a basic program. This is to provide basic visual familiarity and does not teach program development.
- Showing development of a basic user screen. This is to provide basic visual familiarity and does not teach user screen development.
- How to obtain a live image. On FSI built systems, intro how to adjust common user camera settings.

The course length is 3 hours. Due to the short length of the course, the most common format is via GoToMeeting video meeting, but it is also available to be run at your site or at or by an FSI facility.

MVC-301 Customized machine vision course using standard modules

This condensed, customized training selects material from any of our standard courses. This is a very economical type of customization.

One common type is a shortened course designed to include the material most relevant to a particular application. Another is to build a comprehensive training program adapted to the objectives and the participant's level of background.

MVC-302 Customized machine vision course including custom-developed material

This is fully customized training ; unlike MVC-301, it includes material that is not in our standard courses. Additional investment is required for creation of new material. The fully customized portion may be an entire course or just a module to be combined with standard courses or modules.

FSI Machine Vision™

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