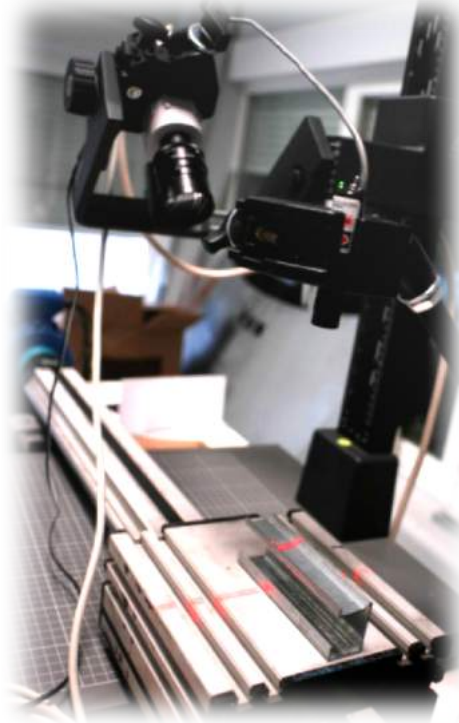


ROBOTICS and AUTOMATION



GOI ESKOLA
POLITEKNIKOA
FACULTY OF
ENGINEERING



[Vasquez, 2016]

Main goal: "To research on adaptive production systems"

It needs to be:

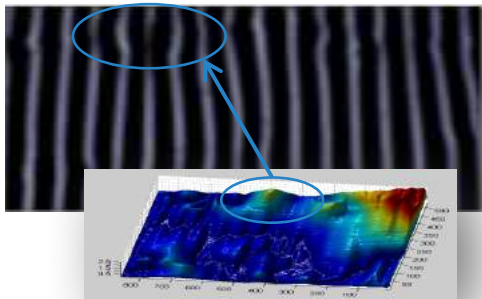
- Scalable
- Cost efficient
- Automate part
- Automate the automatization

*2017 IEEE International Workshop of
Electronics, Control, Measurement, Signals
and their application to Mechatronics
(ECMSM)*

Research topics

Image processing

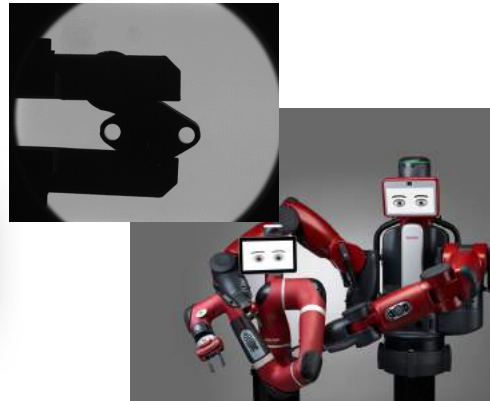
- 2D / 3D Metrology
- Quality inspection
- Medical
- Embedded
- Deep learning
- Camera calibration



[Maestro, 2016]

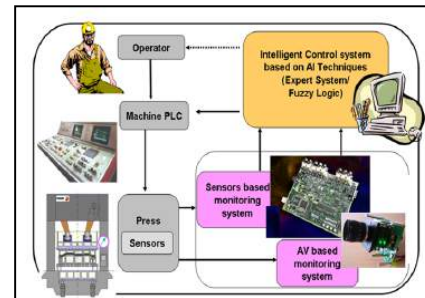
Robotics

- High precision robotics
- Human-robot interface
- Collaborative robotics
- Automated inspection
- Skill-based robot programming



Intelligent automation

- Process optimization
- Predictive maintenance
- Autonomous systems
- Self-learning systems



[Saenz de Argandoña, 2009]



[Perez de Arenaza, 2016]



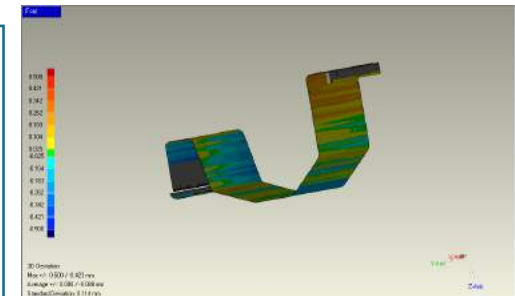
[Zuriarrain, 2012]

Process Automation

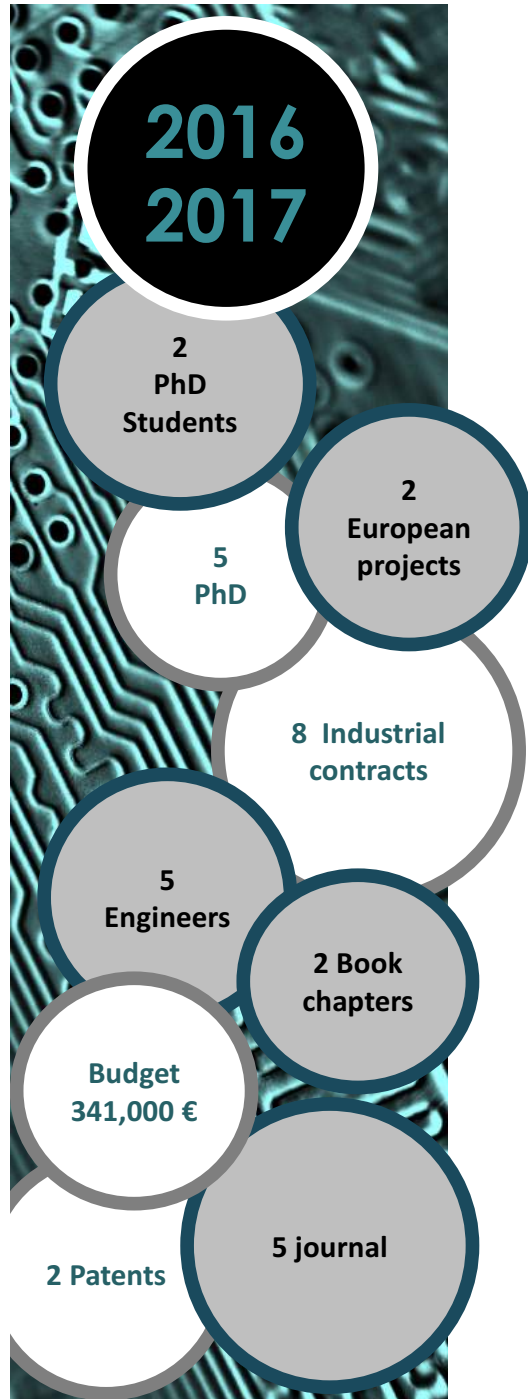
- Sensors & Monitoring
- Industrial control systems (CNC, PLC, PC embedded, SCADA)
- Motion control
- Machine safety

Industrial Communications

- Industrial protocols / Fieldbus: (Profibus, EtherCAT, ProfiNET, ...)
- Connectivity (OPC-UA, MTConnect)
- Internet of Things



[Legarda, 2016]



EQUIPMENT

Signal and image processing laboratory

Automation and Robotics laboratory

RELEVANT PROJECTS

COROBOFLEX “Desarrollo y evaluación de técnicas y estrategias de diseño de sistemas de inspección precisos basados en robots colaborativos fiables”

GREENFRG: Desarrollo de una célula flexible de inspección de componentes forjados y un lenguaje de comunicación hombre máquina inteligente.

GRUPOS SISI Member of the "Intelligent Systems for Industrial Systems" research group recognized by the Basque Government

PANORAMIX “Sistema para reconstrucción tridimensional de superficies mixtas (reflectantes y/o mates) para aplicaciones industriales y médicas”

INMAQUENER “Incremento del valor añadido de la máquina herramienta a través de la utilización de la monitorización, control adaptativo y métodos de control”

ULTRAMED “Localización, detección y modelado de arterias y venas para la asistencia y prevención de enfermedades cardiovasculares mediante ultrasonidos”

AMIAN “Desarrollo de un dispositivo automático para el recuento de fibras”



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