Dr. ENRICO CHIOVETTO

Senior data scientists with long research experience in AI, robotics, human-robotinteraction, cognitive neuroscience and human-centered technologies.

PERSONAL DETAILS

- Date of Birth:
- Address:
- Nationality:
- Mobile:
- Email:

WORK EXPERIENCE

Data scientist **Jan. 2018 – Today**
Schaeffler Technologies AG & Co. KG **Herzogenaurach (Germany)**

Project/Tasks: Working in the Data Science and AI group of the Digital Transformation Center at Schaeffler.

- Giving impulses on identifying innovative or even disruptive robotic and autonomous driving applications.
- Creating new business models for the company through comprehensive analyses und evaluations of the relevant markets and business areas, the business and financial decision models and the evaluation of options for action.
- Presenting the results to the relevant decision-makers of the company as well as the accompaniment of the implementation of the new models.
- Supporting the development of a rough roadmap for these technologies and implementation planning based on a product portfolio strategy and use cases together with Schaeffler´s BUs and their customers.
- Interfacing with management:
  - Heads of R&D/CTOs/CDOs of BUs or companies, respectively.
  - Other technology managers.
  - Relevant product managers of Schaeffler regions, divisions and units.
  - Business area Schaeffler digitalization BUs.
- Developing sensory concepts and simulations for autonomous driving and robotic applications (edge). Project manager role.
- Designing and using machine learning techniques to develop analytical end-to-end solutions to improve operation processes and robotic control and perception.
- Running in-house consulting activities to improve data understanding and to boost data-driven transformation.
- Defining and measuring quantitative UX goals and metrics in collaboration with designers, qualitative researchers, engineers and product managers.

Project languages: German and English.

Researcher **May 2010 – December 2017**
Hertie Institute – University Clinic Tuebingen **Tübingen (Germany)**

Project name: Cogimon
Project term: March 2016 – December 2017
Project/Tasks: work package leader of an EU FP7-research robotic project aiming to advance key technologies that lead to a step-change in cognitive compliant interaction

in human-robot teams, integrating physical human-robot interaction, visually guided manipulation and safety integrated design in a systematic way.

- Development and use of virtual reality setups and machine learning algorithms to model interactive behaviors between humans and humanoid robots oravatar.
- Use of psychophysical methods to assess robot perception and collaboration by humans.

Project languages: English.

Project name: Koroibot
Project term: October 2013 – December 2017
Project/Tasks: work package leader of an EU FP7-research robotic project aiming to enhance the ability of humanoid robots to walk in a dynamic and versatile fashion in the way humans do. Involved cooperation between six academic research institutions.

- Biomechanical and kinematic modelling of complex human walking behaviors.
- Development and use of unsupervised learning algorithms for identification of movement primitives.
- Use of probabilistic kernel methods for movement trajectory generation.
- Use of Kalman filtering and genetic algorithms for human ankle stiffness identification.
- Three-person team.
- Contributed to the teaching activity associated with the course
- "Machine learning II" at the University of Tübingen.
- Supervision of a PhD student and several master students.

Project languages: English.

Project name: AMARSi
Project term: May 2010 - April 2014
Tasks: EU FP7-research robotic project to develop biologically inspired reach motor skills in humanoid robots. Involved cooperation between ten academic research institutions.

- Development and use of unsupervised learning algorithms for identification of movement primitives.
- Contribution to the development of Bayesian model selection criteria.
- Use of Bayesian statistics and dimensionality reduction algorithms to model the integration of kinematic components in the perception of artificial movements.
- Use of psychophysics approaches to study the perception of human-likeness and naturalness of robotic movements.

Project languages: English.

Research Engineer **Jan. 2007 – Apr. 2010**
Italian Institute of Technology **Genoa (Italy)**

Project/Tasks: Doctoral project funded by the Italian ministry of research. Identification of the fundamental electromyographic patterns underlying the accomplishment of complex human movements.

- Use of wavelet and signal processing analysis applied to electromyographic signals.
- Use of standard dimensionality reduction methods for pattern identification.
- Contribution to the design optimal-control models for movement planning.
- Contributed to the start-up phase of a new laboratory for biomechanical and physiological studies.

Project languages: Italian and English.

	Research Engineer **Aug. 2004 – Dec. 2006** **Ashton Graybiel Spatial Orientation Laboratory** **Boston (USA)** *Project/Tasks:* Worked on research projects funded by NASA and US Airforce. ▪ Development of a Kalman filter to model multisensory fusion (vision and Touch) and stochastic structure associated with human postural sway. ▪ Programmed and set up electronic equipment for space research. ▪ Developed graphical user interfaces in Matlab and Java. *Project languages:* Italian and English.
EDUCATION	**Doctoral degree (Ph.D.)** **April 2010** **in humanoid technologies** **University of Genoa, Genoa, (Italy)** **Joined the board of the Italian professional engineers** **May 2004** **Master of Science in** **Apr. 2004** **electronic engineering (with honours)** **University of Padua, Padua (Italy)**
SKILLS AND COMPETENCES	**IT skills:** Thorough knowledge of Matlab. Python, Jupyter notebooks, AI frameworks (Tensorflow and Keras) and R. Solid knowledge of Java and C++. Basic knowledge of Assembly, Pascal and National Instruments LabView. Basic Knowledge of virtual prototype developing software for cars, in particular dSpace ASM, MotionDesk and Control Desk and freeware car simulators (Carla and Airsim). Cloud computing. Knowledge of agile methodologies (Scrum). **Technical skills:** Expert in analysis and control of complex dynamic systems, signal processing, spectral analysis, statistics and statistical techniques for data mining. Solid knowledge of Bayesian estimation and linear and nonlinear optimization techniques. Advanced experience in developing machine learning algorithms for automotive, natural language processing and biomedical applications. **Communicational skills:** Practiced and acute public speaker. The possibility to work for many years in very interdisciplinary environments has made me develop very strong communication skills to interact proficiently with people of different backgrounds (engineers, medical doctors, physicians, physiologist and managers). **Additional competences:** Since 2007 I have covered the role of guest editor for several scientific journals (Experimental Brain Research, Gait and Posture, International Journal of Social Robotics, Plos One, IEEE Transactions on Neural Systems & Rehabilitation Engineering) to evaluate the suitability for publication of multiple scientific works.
LANGUAGES	▪ Italian (Native) ▪ English (C1) ▪ German (B2) ▪ Spanish (A2) ▪ French (A1)
REFERENCES	References available upon request.