

**AL MAGNIFICO RETTORE
DELL'UNIVERSITA' DEGLI STUDI DI MILANO**

Cristiano Alessandro

CURRICULUM VITAE

INFORMAZIONI PERSONALI

| | |
|-----------------|------------|
| Cognome | Alessandro |
| Nome | Cristiano |
| Data Di Nascita | 22/01/1984 |

OCCUPAZIONE ATTUALE

| | |
|----------|---|
| Incarico | Struttura |
| Postdoc | Northwestern University, Dipartimento di Fisiologia, Feinberg School of Medicine (Chicago, IL, USA) |

ISTRUZIONE E FORMAZIONE

| Titolo | Corso di studi | Università | anno conseguimento titolo |
|--|--|-----------------------------------|---------------------------|
| Laurea Triennale | Ingegneria Informatica | Università degli studi di Catania | 2005 |
| Laurea Magistrale | Ingegneria Informatica | Politecnico di Milano | 2008 |
| Dottorato Di Ricerca | Informatica (Robotica, controllo motorio, neuroscienze computazionali) | Università di Zurigo | 2013 |
| Abilitazione alla professione di Ingegnere | | Politecnico di Milano | 2008 |

LINGUE STRANIERE CONOSCIUTE

| lingue | livello di conoscenza |
|----------|-----------------------|
| Inglese | Esperto |
| Tedesco | Base |
| Italiano | Madrelingua |

PREMI, RICONOSCIMENTI E BORSE DI STUDIO

| anno | Descrizione premio |
|------|---|
| 2018 | Accettazione e travel award per partecipare alla conferenza "68 th Lindau Nobel Laureate Meeting on Physiology or Medicine" (Lindau, Germania.) |
| 2015 | Finanziamento della postdoctoral fellowship (24 mesi) "SNSF Advanced Postdoc Mobility Award" bandita dalla Swiss National Science Foundation per il progetto dal titolo "Cortical plasticity during multisensory integration and reach planning". |
| 2015 | Finanziamento del grant "ETHZ Scientific Equipment Grant" bandito dall'ETH di Zurigo per il progetto dal titolo "Force/torque sensors and corresponding electronics". |

| | |
|------|--|
| 2015 | Accettazione e travel award per partecipare al meeting annuale della “Society for the Neural Control of Movements” (Charleston, USA) |
| 2013 | Miglior poster (secondo classificato) alla conferenza “9th Computational Motor Control Workshop” (Negev, Beer-Sheva, Israele). |
| 2009 | Assegnazione della borsa di studio Marie Curie come “early stage researcher” all’interno di una Initial Training Network. |

ATTIVITÀ DI FORMAZIONE O DI RICERCA

La mia attività di ricerca consiste nello studio della coordinazione muscolare in relazione alla biomeccanica, e dei circuiti neurali coinvolti nel processo di generazione dei movimenti utilizzando approcci sia computazionali che sperimentali. Tali ricerche trovano applicazione in ambito di riabilitazione e scienza dello sport.

ATTIVITÀ PROGETTUALE

| Anno | Progetto |
|-----------|---|
| 2016/oggi | Neural control of internal joint variables (USA, NIH) |
| 2015 | National Centre of Competence in Research Robotics (CH, SNSF) www.nccr-robotics.ch |
| 2014 | Smart Technology for Artificial Muscle Applications in Space, STAMAS (EU, FP7) http://www.stamas.ethz.ch/ |
| 2012/2013 | Adaptive Modular Architectures for Rich Motor Skills, AMARSi (EU, FP7) http://www.amarsi-project.eu |
| 2009/2012 | Robotics for Development of Cognition, RobotDoC (Marie Curie Fellowship, EU FP7) http://robotdoc.org |
| 2009/2011 | Embodied Cognition in a Compliant Engineered Robot, ECCEROBOT (EU, FP7) http://eccerobot.org |

CONGRESSI, CONVEGNI E SEMINARI

| Data | Titolo | Sede |
|---------------|--|---------------------|
| Novembre 2018 | Neuroscience 2018 | San Diego (USA) |
| Maggio 2018 | Annual meeting of the Society for Neural Control of Movement | Santa Fe (USA) |
| Novembre 2017 | Neuroscience 2017 | Washington DC (USA) |
| Novembre 2016 | Neuroscience 2016 | San Diego (USA) |
| Giugno 2016 | IEEE International Conference on Biomedical Robotics and Biomechatronics (BioRob) | Singapore |
| Aprile 2015 | Annual meeting of the Society for Neural Control of Movement | Charleston (USA) |
| 2013 | IEEE International Conference on Development and Learning and on Epigenetic Robotics | Osaka (Giappone) |

| | | |
|-------------|---|---------------------|
| Agosto 2012 | 12th International Conference on Simulation of Adaptive Behavior | Odense (Danimarca) |
| Giugno 2012 | IEEE International Conference on Biomedical Robotics and Biomechatronics (BioRob) | Roma (Italia) |
| 2011 | The European Future Technologies Conference and Exhibition (FET) | Budapest (Ungheria) |

PUBBLICAZIONI

| |
|--|
| Libri |
| <u>Alessandro C.</u> , Backers N., Goebel P., Resquin F., Gonzalez J., and Osu R. (2015). Motor Control and Learning Theories . Eds. Jose L. Pons, Rafael Raya and Jose Gonzalez. <i>Emerging Therapies in Neurorehabilitation II</i> . Biosystems & Biorobotics. 10: 225-250. |
| Torricelli D., Barroso F., Coscia M., <u>Alessandro C.</u> , Lunardini F., Esteban E. B., d'Avella A. (2015). Muscle Synergies in the Clinical Practice: Potentials and Practical Issues . Eds. Jose L. Pons, Rafael Raya and Jose Gonzalez. <i>Emerging Therapies in Neurorehabilitation II</i> . Biosystems & Biorobotics. 10: 251-272. |

| |
|---|
| Articoli su riviste |
| <u>Alessandro C.</u> , Rellinger B., Barroso F., Tresch M. (2018). Adaptation after vastus lateralis denervation in rats demonstrates neural regulation of joint stresses and strains . <i>eLife</i> . 7:e38215 |
| <u>Alessandro C.</u> , Barroso F., Tresch M. (2016). Working hard to make a simple definition of synergies . Comment on: "Hand synergies: Integration of robotics and neuroscience for understanding the control of biological and artificial hands" by Marco Santello et al. <i>Physics of Life Reviews</i> . 17:24-26. |
| <u>Alessandro C.</u> , Carbajal J.P., d'Avella A. (2014). Computational analyses of the muscle synergy hypothesis via the Dynamic Response Decomposition . <i>Frontiers in Computational Neuroscience</i> . 7:191 |
| <u>Alessandro C.</u> , Ioannis D., Nori F., Panzeri S., Berret B. (2013). Muscle synergies in neuroscience and robotics: from input to task-space perspectives . <i>Frontiers in Computational Neuroscience</i> . 7:43. |
| Wittmeier S., <u>Alessandro C.</u> , Bascarevic N., Dalamagkidis K., Diamond A., Jäntschi M., Jovanovic K., Knight R., Gravato Marques H., Milosavljevic P., Svetozarevic P., Potkonjak V., Pfeifer R., Knoll A., Holland O. (2012). Towards anthropomorphic robotics . <i>Artificial Life</i> . 19(1):171-193. |

| |
|---|
| Atti di convegni |
| <u>Alessandro C.</u> , Rellinger B., Barroso F., Tresch M. (2018). Restoration of global, but not local, kinematics after denervation of vastus lateralis in rats . Program No. 150.08. <i>2018 Neuroscience Meeting Planner</i> . San Diego, CA: Society for Neuroscience, 2018. Online |
| Tresch M., <u>Alessandro C.</u> , Barroso F., Wei Q., Dhaher Y., Sandercock T., Pai D. (2018). The nervous system activates muscles to minimize internal joint stresses: evidence from quadriceps muscle activations during motor adaptation in the rat . <i>28th NCM Annual Meeting</i> . Santa Fe (NM), USA. May 1-4, 2018 |

| |
|---|
| <p><u>Alessandro C.</u>, Rellinger B., Barroso F., Sandercock T., Tresch M. (2017). Adaptation to quadriceps paralysis as a window into neural control of internal joint variables. Program No. 410.03. <i>2017 Neuroscience Meeting Planner</i>. San Diego, CA: Society for Neuroscience, 2017. Online</p> |
| <p>Barroso F., <u>Alessandro C.</u>, Sandercock T., Tresch M. (2017). Adaptations of neural control to mediolateral perturbations of the patella. Program No. 410.02. <i>2017 Neuroscience Meeting Planner</i>. San Diego, CA: Society for Neuroscience, 2016. Online.</p> |
| <p>Tresch M., <u>Alessandro C.</u>, Barroso F. (2017). Correlation between quadriceps muscles during locomotion in the rat. Program No. 410.04. <i>2017 Neuroscience Meeting Planner</i>. San Diego, CA: Society for Neuroscience, 2016. Online</p> |
| <p><u>Alessandro C.</u>, Barroso F., Tresch M. (2016). Role of knee joint afferents in rat locomotion. Program No. 335.15. <i>2016 Neuroscience Meeting Planner</i>. San Diego, CA: Society for Neuroscience, 2016. Online</p> |
| <p><u>Alessandro C.</u>, Tafreshi A., Riener R. (2016). Increasing leg blood volume during head-down tilt by performing physical exercises, a preliminary study. The 6th IEEE International Conference on Biomedical Robotics and Biomechatronics (BioRob), Singapore, Singapore</p> |
| <p><u>Alessandro C.</u>, Urselli R., Carbajal J.P., Riener R. (2015). Impact of muscle redundancy on the synergy hypothesis. <i>25th NCM Annual Meeting</i>. Charleston (SC), USA. April 21-24, 2015</p> |
| <p>Vollmer A.-L., Rucinski M., <u>Alessandro C.</u>, Wilkinson N., Navarro-Guerrero N., and Handl A. (2013). Special Session on Training in Robotics for Development of Cognition (RobotDoC). The 3rd Joint IEEE International Conference on Development and Learning and on Epigenetic Robotics, Osaka, Japan</p> |
| <p><u>Alessandro C.</u>, Carbajal J.P., d'Avella A. (2012). Synthesis and Adaptation of Effective Motor Synergies for the Solution of Reaching Tasks. <i>Lecture Notes in Artificial Intelligence (LNAI)</i>. Eds. T. Ziemke, C. Balkenius, and J. Hallam (Berlin Springer-Verlag), pag. 33-43</p> |
| <p><u>Alessandro C.</u> and Nori F. (2012). Identification of Synergies by Optimization of Trajectory Tracking Tasks. <i>The Fourth IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechatronics</i>. Roma, Italy. June 24-27, 2012. pag. 924-930</p> |
| <p>Mutti F., <u>Alessandro C.</u>, Angioletti M., Bianchi A., Gini G. (2012). Learning and evaluation of a vergence control system inspired by Hering's law. <i>The Fourth IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechatronics</i>. Roma, Italy. June 24-27, 2012. pag. 931-936</p> |
| <p>Kuppuswamy N., <u>Alessandro C.</u> (2011). Impact of Body Parameters on Dynamic Movement Primitives for Robot Control. <i>The European Future Technologies Conference and Exhibition, FET 2011</i>. Budapest, Hungary</p> |
| <p>Marques G. H., Jäntschi M., Wittmeier S., <u>Alessandro C.</u>, Lungarella M., Knight R., Holland O. (2010). ECCE1: the first of a series of anthropomorphic musculoskeletal upper torsos. <i>IEEE International Conference on Humanoid Robotics, Humanoid 2010</i>. Nashville, USA</p> |
| <p><u>Alessandro Cristiano</u>. (2010). Movement Control of Biologically Inspired Humanoid Robots. Marie Curie Workshop, European Science Forum, <i>ESOF 2010</i>. Turin, Italy</p> |
| <p>Tognetti S., <u>Alessandro C.</u>, Bonarini A., Matteucci M. (2009). Fundamental issues on the recognition of autonomic patterns produced by visual stimuli. <i>Affective Computing and Intelligent Interaction, ACII 2009 - 10/09/2009 Amsterdam, Netherlands</i></p> |
| <p>Arena P., Fortuna L., Frasca M., Patané L., <u>Alessandro C.</u>, Barbagallo D. (2006). Learning high sensors from reflexes via spiking networks in roving robots. <i>8th international IFAC symposium on robot control, IFAC Syrc0 2006, 06/08/2006 Bologna, Italy</i></p> |

ALTRE INFORMAZIONI

Alessandro C., Tafreshi A., Riener R. **Cardiovascular responses to antigravity muscle loading during head-down tilt in static condition and after dynamic exercises.** (*under review su Scientific Reports*).

Preprint: <https://www.biorxiv.org/content/early/2018/08/24/399477>

Le dichiarazioni rese nel presente curriculum sono da ritenersi rilasciate ai sensi degli artt. 46 e 47 del DPR n. 445/2000.

Il presente curriculum, non contiene dati sensibili e dati giudiziari di cui all'art. 4, comma 1, lettere d) ed e) del D.Lgs. 30.6.2003 n. 196.

Luogo e data: Catania, 18/11/2017

FIRMA

Cristina Alessio