

# GIORGIO DAVICO

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## EDUCATION

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- PhD in Computational Biomechanics** **Sep 2015 - present**  
Griffith University, Gold Coast, Australia  
*Topic:* “Development of personalised lower-limb neuromusculoskeletal models of children with cerebral palsy”  
*Supervisors:* Professor David G Lloyd, Dr. Christopher P Carty and Dr. Claudio Pizzolato
- MSc in Biomedical Engineering** **Oct 2011 – Mar 2014**  
Politecnico di Torino, Torino, Italy
- BSc in Biomedical Engineering** **Sep 2008 – Sep 2011**  
Politecnico di Torino, Torino, Italy

## RESEARCH INTERESTS

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Personalised neuromusculoskeletal modelling for surgical planning, rehabilitation and sports.

## RESEARCH EXPERIENCE

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- MSc Graduation Project** **Jul – Dec 2013**  
*Laboratoire BioMécanique et BioIngénierie (BMBI, UMR 7338) - Université de Technologie de Compiègne, Compiègne, France*
- Numerical study of the embolization of brain arteriovenous malformations by glue injection.
- MSc student project “Adaptive Canoeing and Rowing”** **Oct 2011 – Mar 2014**  
*DIMEAS - Politecnico di Torino, Torino, Italy*
- Design of an adapted canoe seat for paraplegic people for rehabilitation purposes.

## TEACHING AND MENTORING EXPERIENCE

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- Sessional Academic Teacher, Musculoskeletal Biomechanics** **Mar – Jun 2018**  
*School of allied Health Sciences (AHS) - Griffith University, Gold Coast, Australia*
- Lab demonstrations (Muscle mechanics, muscle stretch-shorten cycle, clinical gait analysis) and  
Computer lab demonstrations (Musculoskeletal system, tissue properties and gait).

### **Sessional Academic Teacher, Introductory Biomechanics**

**Jul 2016 – Dec 2017**

*School of allied Health Sciences (AHS) - Griffith University, Gold Coast, Australia*

- Lab demonstrations (2D video acquisition and biomechanical analysis with Kinovea and SiliconCoach, kinetics and neuromechanics), and student performance evaluation.

### **Sessional Academic Teacher, Bioinstrumentation**

**Mar 2016 – May 2017**

*School of allied Health Sciences (AHS) - Griffith University, Gold Coast, Australia*

- Electronic Lab demonstrations (Oscilloscope and function generators, AC circuits analysis, filters, noise reduction and Fourier analysis, transducers and Wheatstone bridge, operational amplifiers), Computer Lab demonstrations (Labview) and student performance evaluation.

### **Graduate Mentor**

**Mar – Jun 2016**

*School of allied Health Sciences (AHS) - Griffith University, Gold Coast, Australia*

- Mentoring of three undergraduate Engineering students in subject-specific skeletal modelling using medical imaging and guidance in preparation and presentation of research findings.

## **SCHOLARSHIP AND AWARDS**

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Griffith University International Postgraduate Research Scholarship (GUPRS) to pursue a PhD - \$27596 pa.

Griffith Graduate Research School Travel Grant to attend the World Congress of Biomechanics (WCB2018) - \$2000.

World Council of Biomechanics Student Travel Bursary to participate to the WCB2018 conference - \$570.

Completion Assistance Postgraduate Research Scholarship to complete a PhD – *same rate as GUPRS*.

## **CONFERENCE PRESENTATIONS**

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### **ORAL PRESENTATIONS**

**Davico G.**, Killen B.A., Pizzolato C., Lloyd D.G., Barzan M., Carty, C.P., (2019, July-August). *Paediatric lower limb bones can be accurately reconstructed via the MAP Client for use in musculoskeletal modelling*. International society of biomechanics (ISB/ASB2019), Calgary, Canada – **Shortlisted for the David Winter Young Investigator Award**

**Davico, G.**, Killen B.A., Carty, C.P., Lloyd, D.G., Devaprakash D., Pizzolato, C., (2019, July-August). *Developing the new generation of personalised neuromusculoskeletal models to investigate cerebral palsy*. International society of biomechanics (ISB/ASB2019), Calgary, Canada.

**Davico G.**, Pizzolato C., Carty C.P., Obst S.P., Lloyd D.G., (2018, July). *Investigating cerebral palsy using EMG-informed approaches: a twin case study*. 8<sup>th</sup> World Congress of Biomechanics (WCB2018), Dublin, Ireland.

**Davico, G.**, Pizzolato, C., Obst, S., Lloyd, D.G., Carty, C.P., (2017, July). *Muscle contributions to knee joint moment and knee joint contact forces during walking in children with cerebral palsy: a twin study*. International society of biomechanics (ISB2017), Brisbane, Australia.

**Davico, G.**, Pizzolato, C., Obst, S., Lloyd, D.G., Carty, C.P., (2016, December). *Muscle contributions to knee joint moment in children with cerebral palsy: a twin case study*. Australasian biomechanics conference (ABC10), Melbourne, Australia.

## PUBLICATIONS

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### FIRST AUTHOR

**Davico, G.**, Pizzolato, C., Killen B.A., Barzan M., Suwarganda E., Lloyd, D.G., Carty, C.P., (under review). *Best methods and data to reconstruct paediatric lower limb bones for musculoskeletal modelling*. Biomechanics and Modeling in Mechanobiology.

**Davico, G.**, Pizzolato, C., Lloyd, D.G., Obst, S.J., Walsh P.H, Carty, C.P., (under review). *Increasing level of neuromusculoskeletal model personalisation to investigate joint contact forces in cerebral palsy: a twin case study*. Clinical Biomechanics.

### CO-AUTHORSHIPS

Killen, B.A., Pizzolato, C., Carty, C.P., Diamond, L.E., Modenese, L., **Davico, G.**, Barzan, M, Brito da Luz, S., Suwarganda, E., Devaprakash D., Barrett, R.S., Saxby, D.J., Lloyd, D.G., (ready for submission). *Big data and machine learning to create physics-based personalised computational neuromusculoskeletal models*. Biomechanics and Modeling in Mechanobiology.

Devaprakash D., Lloyd, D.G., Barrett R.S., **Davico, G.**, Obst, S., Collins T., Pizzolato, C., (in preparation). *Quantification of free Achilles tendon geometry, twist and mechanical stiffness in trained and untrained individuals*. Frontiers in Physiology.

## PROFESSIONAL EXPERIENCE

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### Clinical Product Specialist

Sep 2014 – Sep 2015

Sanitex SPA, Torino, Italy

- Clinical and Technical support on:
  - *Philips Volcano* systems (Coronary line: IntraVascular UltraSound, Revolution® Catheter, Eagle Eye® Platinum Catheter, Verrata® Pressure Guide Wire, iFR® Modality, SyncVision™ Technology System; Peripheral line: Visions® PV Catheter, Crux® Vena Cava Filter, Phoenix® Atherectomy System, Pioneer® Plus Catheter);

- *Elixir Medical* Novolimus™ Eluting Bioresorbable Coronary Scaffold System (DESolve®);
- *IMDS* chronic total occlusion dedicated medical devices (Guidion™, NHancer Pro X, NHancer Rx).

### **BSc Graduation project**

**May – Jun 2011**

*DIPRO MEDICAL DEVICES S.r.l, San Mauro Torinese, Italy*

- Internship on studying new prostheses and orthoses for the treatment of fecal incontinence

### **VOLUNTEERING AND UNIVERSITY SERVICE**

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#### **Volunteer**

**Jul 2017**

*Footwear Biomechanics Symposium 2017, Gold Coast, Australia*

#### **Part-time IT collaborator**

**Sep 2012 – Jul 2013**

*Politecnico di Torino, Torino, Italy*

### **TECHNICAL SKILLS**

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- Programming languages: MATLAB, Python.
- Image processing packages and CAD: Mimics Research Suite, Solidworks, Rhino3D, Ansys (basic knowledge).
- Biomechanical analyses software: Vicon Nexus, OpenSim (GUI and API), CEINMS, MAP Client.
- Experimental skills: 3D gait analysis and lower-limb surface electromyography

### **LANGUAGES**

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Italian: Mother tongue

English: Proficient

French: Basic knowledge