TO MAGNIFICO RETTORE OF UNIVERSITA' DEGLI STUDI DI MILANO   **ID CODE   5800**

I the undersigned asks to participate in the public selection, for qualifications and examinations, for the awarding of a type B fellowship at **Dipartimento di Informatica**

Scientist- in – charge: **Roberto Sassi**

Davide Coluzzi

CURRICULUM VITAE

PERSONAL INFORMATION

Surname	Coluzzi
Name	Davide

PRESENT OCCUPATION

Appointment	Structure
Research Fellow	Dipartimento di Elettronica, Informazione e Bioingegneria, Politecnico di Milano

EDUCATION AND TRAINING

Degree	Course of studies	University	year of achievement of the degree
Degree	Master of Science - Computer Science – 110/110 Summa Cum Laude	Università degli Studi di Milano	2018
PhD	Doctor of Philosophy in Bioengineering (planned	Politecnico di Milano	2023 (final defense on July 25)

FOREIGN LANGUAGES

Languages	level of knowledge
English	Advanced - C1 CEFR Level through IELTS Academic Certificate achieved on 01/16/2020
French	Pre-intermediate

AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award
2023	One-year research fellowship at Politecnico di Milano
2020	2nd place at the GNB Datathon Group Challenge 2020 on Artificial Intelligence methods

2020	PhD scholarship at Politecnico di Milano
2018	One-year research fellowship at Università degli Studi di Milano
2018	"Thesis Abroad" scholarship at Università degli Studi di Milano
2017	Developer in a team group representing Università degli Studi di Milano at the NXP Cup EMEA (Intelligent Car Racing) Qualifications in Grenoble

TRAINING OR RESEARCH ACTIVITY

Invited speaker at 17th Edition Meeting on Tomography and Applications Discrete Tomography, Neuroscience and Image Reconstruction with the seminar "Biomarker Investigation using Multiple Brain Measures from MRI through XAI in Alzheimer's Disease Classification" (https://www.mate.polimi.it/events/TAIR2023/) - Dipartimento di Matematica – Politecnico di Milano - 05/16/2023
"Telecommunication Networks" seminar speaker for the course of Medical Informatics for the Master of Science in Bioengineering - Dipartimento di Elettronica, Informazione e Bioingegneria – Politecnico di Milano - May 2020/2021/2022/2023
Co-Advisor with Prof. Baselli G. of 3 Master's students - B3Lab – Dipartimento di Elettronica, Informazione e Bioingegneria – Politecnico di Milano – 2020-2023
Co-Advisor with Prof. Baselli G. of 4 Bachelor's students - B3Lab – Dipartimento di Elettronica, Informazione e Bioingegneria – Politecnico di Milano – 2020-2023
Invited speaker at 16th Edition Meeting on Tomography and Applications Discrete Tomography, Neuroscience and Image Reconstruction with the seminar "Brain Connectivity through Graph Theory: SPIDER-NET a New Tool to Explore Sub-Networks" (https://www.mate.polimi.it/events/TAIR2022/) - Dipartimento di Matematica – Politecnico di Milano - 05/03/2022
Laboratory tutor for the Master of Science course Medical Informatics for three years (2019/2020, 2020/2021, 2021/2022 Art. 45, ING-INF/06) - Dipartimento di Elettronica, Informazione e Bioingegneria – Politecnico di Milano - March – July 2020/2021/2022
Scientific reviewer for the 43rd and 44th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, the Physiological Measurement journal (PMEA) and Journal of Ambient Intelligence and Humanized Computing (JAIHC) – 2020-2023
Tutor for work-related learning at the E-Health Lab regarding "Mobile-Health and sensor signal processing" E-Health Lab – Dipartimento di Elettronica, Informazione e Bioingegneria – Politecnico di Milano
Research internship about tele-rehabilitation and sleep monitoring of chronic disease patients by using contactless systems - B3Lab – Dipartimento di Elettronica, Informazione e Bioingegneria – Politecnico di Milano - 12/02/2019 – 02/01/2020
Co-Advisor with Prof. Sassi R. of a Bachelor's student – BISP Lab – Dipartimento di Informatica – Università degli Studi di Milano – 2019
Research internship about the analysis of the cognitive processes related to the act of writing using event-related potentials - I3S lab de Sophia Antipolis - Université Côte d'Azur - 03/15/2018 – 08/15/2018

PROJECT ACTIVITY

Year	Project
2020	SIDERA^B – Sistema Integrato DomiciliarE e Riabilitazione Assistita al Benessere. Research project link: http://www.liuc.it/la-ricerca-in-liuc/la-ricerca/progetti/siderab-sistema-integrato-domiciliare-e-riabilitazione-assistita-al-benessere/
2019	Horizon 2020 project "NESTORE - Novel Empowering Solutions and Technologies for Older people to Retain Everyday life activities". Research project link: http://nestore-coach.eu

2018	Six-month research project as part of Master thesis carried out at I3S lab in cooperation with the Centre Hospitalier Universitaire de Nice "Pasteur" in the context of electroencephalography (EEG). The study aimed at tracking the neurophysiological correlates of giftedness. Research project link: www.i3s.unice.fr/HP

CONGRESSES AND SEMINARS

Date	Title	Place
May 15-17, 2023	17th Meeting on Tomography and Applications Discrete Tomography, Neuroscience and Image Reconstruction	Milano (IT)
July 11-15, 2022	44th Annual International Conference of the IEEE Engineering in Medicine and Biology Society	Glasgow (SC)
June 19-23, 2022	28th OHBM Annual Meeting	Glasgow (SC)
May 02-04, 2022	16th Meeting on Tomography and Applications Discrete Tomography, Neuroscience and Image Reconstruction	Milano (IT)
July 12-16, 2021	30th IEEE SSIE Summer School of Information Engineering "S. Pupolin" on "Machine learning: theory and applications"	Padova (IT)
September 7-10, 2020	39th GNB Annual School 2020	Bressanone (IT)
July 1-2, 2019	1st Neuromod Days meeting	Frejus (FR)

PUBLICATIONS

Articles in reviews
"Biomarker Investigation using Multiple Brain Measures from MRI through XAI in Alzheimer's Disease Classification" Coluzzi D.*; Bordin V.*; Rivolta M.W.; Fortel I.; Zhan L.; Leow A.; Baselli G. (*equal contributions) https://doi.org/10.48550/arXiv.2305.03056 **(Under Submission)**
"Diffuse and Localized Functional Dysconnectivity in Schizophrenia: a Bootstrapped Top-Down Approach" Coluzzi D., Baselli G.; Fundamenta Informaticae, https://doi.org/10.48550/arXiv.2305.02369, Special Issue Tomography and Applications, 2023 **(Accepted, Pending Publication)**
"Multi-Scale Evaluation of Sleep Quality Based on Motion Signal from Unobtrusive Device" Coluzzi D.; Baselli G.; Bianchi A.M.; Guerrero-Mora G.; Kortelainen J.M.; Tenhunen M.L.; Mendez M.O. Sensors, 22, 5295. https://doi.org/10.3390/s22145295, Special Issue Biomedical Sensors for Functional Mapping: Techniques, Methods, Experimental and Medical Applications, 2022
"Development and testing of SPIDER-NET: an interactive tool for brain connectogram visualization, sub-network exploration and graph metrics quantification"

Coluzzi D., Pirastru A., Pelizzari, L., Cabinio, M., Laganà, M. M., Baselli G., and Baglio F.

Frontiers in Neuroscience, https://doi.org/10.3389/fnins.2022.818385, Special Issue Advanced Computational Tools for Mapping the Multidimensional Architecture of the Brain, 2022

"Design and Validation of a Minimal Complexity Algorithm for Stair Step Counting"

Coluzzi D., Rivolta M.W., Mastropietro, A., Porcelli, S., Mauri M.L., et al.

Computers, 9, 31, https://doi.org/10.3390/computers9020031, Special Issue Methods and Applications for Imaging, Simulation, and Modelling in Biology and Medicine: Artificial Intelligence, Current Research, New Trends, April 16, 2020

Congress proceedings
"Explainable AI Reveals White Matter Hyperintensities for Alzheimer's Disease Identification: a Preliminary Study" Bordin V.*, Coluzzi D.*, Rivolta M.W. and Baselli G. (* equal contributions) 44th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, https://doi.org/10.1109/EMBC48229.2022.9871306, 2022, Glasgow (SC)
"A Tool for Brain Networks Visualization and Investigation Finalized to Patient-Tailored Rehabilitation: SPIDER-NET" Coluzzi D., Pirastru A., Pelizzari, L., Cabinio, M., Baselli G., and Baglio F. 28th OHBM Annual Meeting, 2022, Glasgow (SC)
"A new scheme using signal processing tools to evoke and analyze event-related potentials in giftedness: A cross-disciplinary approach" Guetat S., Coluzzi D., H. Rix, J. Lebrun, O.Meste et al. 1st Neuromod Days meeting, July 1-2, 2019, Frejus (FR)

OTHER INFORMATION

First author of the licensed software tool "SPIDER-NET", developed in cooperation between Politecnico di Milano and Fondazione Don Carlo Gnocchi. Software Link: https://caditer.dongnocchi.it/spidernet/
Abilitated as Information Engineer in 2021

Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

Please note that CV WILL BE PUBLISHED on the University website and It is recommended that personal and sensitive data should not be included. This template is realized to satisfy the need of publication without personal and sensitive data.

Please DO NOT SIGN this form.

Place and date: Milano, 04/07/2023

Davide Coluzzi

Address
Via dei Pellegrini, 26
20122, Milano

Contact
+39 3409977788
davide.coluzzi@polimi.it
davide.coluzzi1@gmail.com

Date of birth
12|12|1994

Skills

- IELTS Academic certificate |
Cambridge Assessment English |
C1 CEFR level
01/16/2020

- Driving Licence B
06/14/2013

- ECDL European Computer
Driving Licence
05/10/2013

Professional background

Information Engineer **(abilitated)** and computer scientist specialised in Signal Processing and Machine-Deep Learning applied to biomedical, industrial and audio research projects. Skilled in Sound and Music Computing, Data Science and Mobile and Pervasive Computing.

Education

2023 (Planned) – Doctor of Philosophy - PhD | Bioengineering
Politecnico di MilanoPiazza Leonardo da Vinci 32, Milano

2018 – Master of Science - MSc | Computer Science
110/110 Summa Cum Laude
Università degli Studi di Milano
Via Festa del Perdono 7, Milano

2016 – Bachelor of Science - BSc | Music Information Science
Università degli Studi di Milano
Via Festa del Perdono 7, Milano

2013 – High School Diploma, Scientific Studies | P.N.I.
Liceo Scientifico Statale "Galileo Galilei"
Via Anzio 2. Potenza

Research experience

12/02/2019 – 02/01/2020 – Research internship about tele-rehabilitation and sleep monitoring of chronic disease patients by using contactless systems
B³Lab – Dipartimento di Elettronica, Informazione e Bioingegneria – Politecnico di Milano
Via Golgi, 39, Milano (IT)
- SIDERA^B research project link: http://www.liuc.it/la-ricerca-in-liuc/la-ricerca/progetti/siderab-sistema-integrato-domiciliare-e-riabilitazione-assistita-al-benessere/;

12/01/2018 – 12/01/2019 – Research fellowship about remote monitoring and quantification of physical activity with wearable sensors to support healthy aging
BISP Lab - Department of Computer Science - Università degli Studi di Milano
Via Celoria, 18, Milano (IT)
- Horizon 2020 NESTORE research project (H2020-SC1-2016-2017) link: http://nestore-coach.eu;

03/15/2018 – 08/15/2018 – Research internship about the analysis of the cognitive processes related to the act of writing using event-related potentials
I3S lab de Sophia Antipolis - Université Côte d'Azur
Route des Lucioles, 2000, Sophia Antipolis (FR)
- Research project link: www.i3s.unice.fr/HP

Publications

"Biomarker Investigation using Multiple Brain Measures from MRI through XAI in Alzheimer's Disease Classification"
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Sensors, 22, 5295. https://doi.org/10.3390/s22145295, Special Issue Biomedical Sensors for Functional Mapping: Techniques, Methods, Experimental and Medical Applications, 2022

"Development and testing of SPIDER-NET: an interactive tool for brain connectogram visualization, sub-network exploration and graph metrics quantification"
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Frontiers in Neuroscience, https://doi.org/10.3389/fnins.2022.818385, Special Issue Advanced Computational Tools for Mapping the Multidimensional Architecture of the Brain, 2022

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Computers, 9, 31, https://doi.org/10.3390/computers9020031, Special Issue Methods and Applications for Imaging, Simulation, and Modelling in Biology and Medicine: Artificial Intelligence, Current Research, New Trends, April 16, 2020

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Guetat S., Coluzzi D., H. Rix, J. Lebrun, O.Meste et al.
1st Neuromod Days meeting, July 1-2, 2019, Frejus (FR)

Academic experience

05/03/2022 – Invited speaker at 17th Edition Meeting on Tomography and Applications Discrete Tomography, Neuroscience and Image Reconstruction with the seminar "Biomarker Investigation using Multiple Brain Measures from MRI through XAI in Alzheimer's Disease Classification"
(https://www.mate.polimi.it/events/TAIR2023/)
Dipartimento di Matematica – Politecnico di Milano
Via Edoardo Bonardi, 9, Milano (IT)

05/03/2022 – Invited speaker at 16th Edition Meeting on Tomography and Applications Discrete Tomography, Neuroscience and Image Reconstruction with the seminar "Brain Connectivity through Graph Theory: SPIDER-NET a New Tool to Explore Sub-Networks"
(https://www.mate.polimi.it/events/TAIR2022/)
Dipartimento di Matematica – Politecnico di Milano
Via Edoardo Bonardi, 9, Milano (IT)

2020 – 2023 –
Co-Advisor with Prof. Baselli G. of 4 Bachelor's students;
Co-Advisor with Prof. Baselli G. of 3 Master's students;
Dipartimento di Elettronica, Informazione e Bioingegneria – Politecnico di Milano
Via Golgi, 39, Milano (IT)

2020 - 2023 –
Scientific reviewer for the 43rd and 44th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, the Physiological Measurement journal (PMEA) and Journal of Ambient Intelligence and Humanized Computing (JAIHC);

March – July 2020/2021/2022 – Laboratory tutor for the Master of Science course Medical Informatics (2019/2020, 2020/2021, 2021/2022 Art. 45, ING-INF/06)
Dipartimento di Elettronica, Informazione e Bioingegneria – Politecnico di Milano
Via Golgi, 39, Milano (IT)

May 2020/2021/2022/2023 – "Telecommunication Networks" seminar speaker for the course of Medical Informatics for the Master of Science in Bioengineering.
Dipartimento di Elettronica, Informazione e Bioingegneria – Politecnico di Milano
Via Golgi, 39, Milano (IT)

February 2020 – Tutor for work-related learning at the E-Health Lab regarding "Mobile-Health and sensor signal processing"
E-Health Lab – Dipartimento di Elettronica, Informazione e Bioingegneria – Politecnico di Milano
Via Golgi, 39, Milano (IT)

March 2019 – October 2019 – Co-Advisor with prof. Sassi R. in bachelor thesis "Development of algorithms for automatic quantification of the 30-s chair stand test by means of wearable devices"
BISP Lab - Department of Computer Science - Università degli Studi di Milano
Via Celoria, 18, Milano (IT)

October 2017 – March 2018 – Computer Science tutor at ALaDDIn lab
ALaDDIn lab - Department of Computer Science - Università degli Studi di Milano
Via Celoria, 18, Milano (IT)

Work experience

March 2016 - July 2016 – Restoration project of published and unpublished degraded tracks
"Fondazione Giorgio Gaber"
Piazza Aspromonte, 26, Milano (IT)
-    "Fondazione Giorgio Gaber" website: http://www.giorgiogaber.it/

03/07/2016 - 06/10/2016 – Internship on audio signal processing for musical media restoration.
"Chocolate Audio" Company
Via Marengo 5/D, Seregno (IT)

Computer Languages

Java

C

C++

SQL

Python 3.0

PHP

Html/HTML5

Css/Css3

VBA

Javascript

Csound

IEEE 1599

Software

Matlab Mathworks

Izotope RX 5 Audio Editor

Oracle Database 11g Express Edition

Microsoft Office Package

Reaper

Fruity Loops 11

Zetta RCS

Ableton Live 10

Finale 2014

Sound Forge

Audacity

IELTS™

Test Report Form

ACADEMIC

Centre Number	IT010	Date	16/JAN/2020	Candidate Number	013854

Candidate Details

Family Name	COLUZZI
First Name	DAVIDE
Candidate ID	AZ0647324

Date of Birth	12/12/1994	Sex (M/F)	M	Scheme Code	Private Candidate
Country or Region of Origin					
Country of Nationality	ITALY				
First Language	ITALIAN				

Test Results

Listening	7.0	Reading	8.0	Writing	6.0	Speaking	7.0	Overall Band Score	7.0	CEFR Level	C1

Administrator Comments

Centre stamp

British Council
Milan

Validation stamp

VALIDATION STAMP
CAMBRIDGE ENGLISH/BRITISH COUNCIL
IELTS

Administrator's Signature

Date	28/01/2020	Test Report Form Number	19IT013854COLD010A

BRITISH COUNCIL   idp   Cambridge Assessment English

BAND 9 **EXPERT USER**

Has fully operational command of the language: appropriate, accurate and fluent with complete understanding.

BAND 8 **VERY GOOD USER**

Has fully operational command of the language with only occasional unsystematic inaccuracies and inappropriacies. Misunderstandings may occur in unfamiliar situations. Handles complex detailed argumentation well.

BAND 7 **GOOD USER**

Has operational command of the language, though with occasional inaccuracies, inappropriacies and misunderstandings in some situations. Generally handles complex language well and understands detailed reasoning.

BAND 6 **COMPETENT USER**

Has generally effective command of the language despite some inaccuracies, inappropriacies and misunderstandings. Can use and understand fairly complex language, particularly in familiar situations.

BAND 5 **MODEST USER**

Has partial command of the language, coping with overall meaning in most situations, though is likely to make many mistakes. Should be able to handle basic communication in own field.

BAND 4 **LIMITED USER**

Basic competence is limited to familiar situations. Has frequent problems in understanding and expression. Is not able to use complex language.

BAND 3 **EXTREMELY LIMITED USER**

Conveys and understands only general meaning in very familiar situations. Frequent breakdowns in communication occur.

BAND 2 **INTERMITTENT USER**

No real communication is possible except for the most basic information using isolated words or short formulae in familiar situations and to meet immediate needs. Has great difficulty understanding spoken and written English.

BAND 1 **NON USER**

Essentially has no ability to use the language beyond possibly a few isolated words.

BAND 0 **DID NOT ATTEMPT THE TEST**

No assessable information provided.