

# Davide BUFFELLI

## PERSONAL DATA

PLACE AND DATE OF BIRTH: Italy | 30 December 1994  
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## ABOUT ME

My university studies focused on Algorithmics, and Machine Learning. After a six months internship experience developing Deep Learning algorithms, and my graduation, I decided to follow my passion for research. I spent six months as a Research Fellow, and I am now a first year Ph.D. student in Information Engineering at the University of Padova. I have a broad interest in Deep Learning, with a current focus on techniques for structured data (geometric Deep Learning), complex temporal data (multimodal time series, and evolving graphs), and meta-learning.

## EDUCATION

- OCT. 2019 - Present Ph.D Student in INFORMATION ENGINEERING,  
**Università degli studi di Padova**, Padova.  
Supervisor: Prof. Fabio VANDIN.
- FEB. 2019 Master's Degree in COMPUTER SCIENCE ENGINEERING,  
with final grade 110/110 with honors, **Università degli studi di Padova**, Padova.  
Thesis: "A Deep Learning Model for Personalised Human Activity Recognition."  
Advisor: Prof. Fabio VANDIN.
- JULY 2016 Bachelor's Degree in INFORMATION TECHNOLOGY ENGINEERING,  
with final grade 107/110, **Università degli studi di Padova**, Padova.  
Thesis: "Algorithms for the determination of node centralities in a graph."  
Advisor: Prof. Andrea Alberto PIETRACAPRINA.
- JULY 2013 Engineering Technician in Computer Science (Secondary School Diploma),  
**Istituto Tecnico Informatico "Alle Stimate"**, Verona | Final Grade: 94/100.

## WORK EXPERIENCE

- APR. 2019-SEPT. 2019 Research Fellow at UNIVERSITY OF PADOVA, Padova  
Project: "Machine Learning for Temporal Data"  
Supervisor: Professor Fabio Vandin.  
The research project focused on the development of novel Deep Learning frameworks for multimodal times series.
- JAN. 2019-FEB. 2019 Data Scientist, Machine Learning Engineer at MACHINE LEARNING REPLY, Milan  
During my time at Machine Learning Reply I had the chance to work for important clients on machine learning related projects. In particular I contributed to:
- the development of a chatbot that aids financial traders in their operations.
  - the development of an automatic system for the analysis of documents and invoices.
- The main technologies involved were: Python, Rasa, Google Cloud Vision, Java.
- JUL. 2018-DEC. 2018 Data Science Intern at PHILIPS DIGITAL AND COMPUTATIONAL PATHOLOGY, Belfast  
I worked in the team responsible for the development of algorithms that aid pathologists in the analysis of medical slides (inside the TissueMark application). This implied the creation, training and validation of Deep Learning models and the engineering, processing and analysis of data.  
In more detail, my tasks included:
- The creation of an automatic system for the tuning of hyperparameters for Deep Learning models.
  - The development of the algorithm for the identification of the appropriate tumour regions for macrodissection for lung tissue slides (which included the analysis and engineering of data and the training and validation of Deep Learning models).
  - The development of technical tasks to improve the overall Deep Learning infrastructure.
- The main technologies involved were: Python, Keras, TensorFlow.

## PUBLICATIONS

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- **Are Graph Convolutional Networks Fully Exploiting Graph Structure?**  
[Davide Buffelli](#), Fabio Vandin, *Preprint*, 2020. [\[PDF \(arXiv\)\]](#)
- **Attention-Based Deep Learning Framework for Human Activity Recognition with User Adaptation**  
[Davide Buffelli](#), Fabio Vandin, *Preprint*, 2020. [\[PDF \(arXiv\)\]](#) [\[Code\]](#)

## POSTERS & PRESENTATIONS

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- **Poster** - “Are Graph Convolutional Networks Fully Exploiting Graph Structure?”  
Presented at the [ELLIS Workshop on Geometric and Relational Deep Learning](#) - 24/02/2020. [\[Video\]](#) [\[Slides\]](#)

## SERVICE

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Reviewer for: *RECOMB 2020*, *ISMB 2020*, *KDD 2020*

## COMPUTER SKILLS

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**Proficient:** PYTHON, JAVA

**Familiar:** C, APACHE SPARK, SQL, POSTGRESQL, OBJECTIVE-C, SWIFT.

I worked extensively, both in an academic and in a professional environment, with the main Machine Learning and Deep Learning libraries such as TensorFlow, PyTorch, Keras, Pandas, scikit-learn.

## LANGUAGES

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ITALIAN: Mother tongue.

ENGLISH: Advanced C1.