

Davide Belli

DEEP LEARNING RESEARCH ENGINEER

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Education

University of Amsterdam

[Amsterdam, NL](#)

MSc IN ARTIFICIAL INTELLIGENCE

Sep. 2017 - Sep. 2019

- Graduated Cum Laude, GPA 8.8/10 (A+)
- Main Courses: Machine Learning (I, II), Computer Vision (I, II), NLP (I, II), Deep Learning, Reinforcement Learning, Information Retrieval
- Skills and technologies: Python (NumPy, Matplotlib, PyTorch, scikit-learn), MATLAB, Git, LaTeX

University of Trento

[Trento, IT](#)

BSc IN COMPUTER SCIENCE

Sep. 2014 - Jul. 2017

- Graduated Cum Laude, GPA 110/100
- Main Courses: Calculus, Linear Algebra, Probability and Statistics, Logics, Algorithms and Data Structures, Functional and Object Programming, Web and Mobile Programming, OS, Networks, Databases, Compilers, Software Engineering (I, II)
- Skills and technologies: C++, Java, Android, Node.js, Git, HTML/CSS, XML

Work Experience

Qualcomm AI Research

[Amsterdam, NL](#)

DEEP LEARNING RESEARCH ENGINEER

Nov. 2019 - Present

- Worked on applied DL research in the Perception team, investigated image classification tasks with unbalanced, noisy, real-world data.
- Implemented a variety of recent DL methods and architectures. Introduced model improvements from the research tracks in a product periodically released to customers.
- Topics explored: Domain generalization, Personalization, Transfer learning, Style transfer, Multi-modal learning, Online learning.
- Skills and technologies: Python (PyTorch, NumPy, Matplotlib, Pandas), Bash, Git

University of Amsterdam

[Amsterdam, NL](#)

GRADUATE TEACHING ASSISTANT

Oct. 2018 - Jun. 2019

- Graduate Teaching Assistant for the core courses Machine Learning 1, Deep Learning and Information Retrieval in the MSc AI at UvA.
- Responsible for giving practical sessions, designing and correcting exams, homeworks and lab assignments.

Research Projects

Image-Conditioned Graph Generation with Transformers

2019

- Introduced a new transformer-based model for image-to-graph generation, outperforming existing generative models for graphs. Released a new dataset and metric for the extraction of road networks from segmentation of satellite images.
- Master Thesis project supervised by Thomas Kipf from AMLab, UvA.
- *Image-Conditioned Graph Generation for Road Network Extraction* was accepted at NeurIPS 2019, GRL workshop.

Improving Visual Dialogue agents with Mask R-CNN

2018

- Improved a multi-modal learning agent for Visual Question Answering using Mask R-CNN.
- Research project supervised by Elia Bruni from ILLC, UvA.
- *Adding Object Detection Skills to Visual Dialogue Agents* was accepted at ECCV 2018, SiVL workshop.

Image Inpainting for anomaly detection in medical imaging

2018

- Applied Deep Generative Models to inpainting for the unsupervised discovery of anomalies in medical images.
- Research project part of the 'Honours Programme' for top students at UvA, supervised by Shi Hu from AMLab, UvA.
- Presented our work in the papers *Chest X-ray Inpainting with Deep Generative Models* and *Context Encoding Chest X-rays*.

Publications

- Belli, D and Kipf, T., *Image-Conditioned Graph Generation for Road Network Extraction*, **NeurIPS 2019 GRL workshop**.
- Bani, G.*, Belli, D.*, Dagan, G.*, Geenen, A.*, Skliar, A., Venkatesh, A., Baumgartner, T., Bruni, E. and Fernández, R., *Adding Object Detection Skills to Visual Dialogue Agents*, **ECCV 2018 SiVL workshop**.
- Belli, D., Hu, S., Sogancioglu, E. and van Ginneken, B., *Context Encoding Chest X-rays*, arXiv preprint arXiv:1812.00964.
- Sogancioglu, E.*, Hu, S.*, Belli, D. and van Ginneken, B., *Chest X-ray Inpainting with Deep Generative Models*, arXiv preprint arXiv:1809.01471,

Honors & Awards

2019	1st Place , Amsterdam Programming Contest	<i>Amsterdam, NL</i>
2018	Top 50% , ACM-ICPC Nwerc European Semi-Finals	<i>Eindhoven, NL</i>
2018	Top 50% , BAPC Regionals	<i>Louvain-la-Neuve, BE</i>
2016	Bronze Medal , ACM-ICPC Swerc European Semi-Finals	<i>Porto, PT</i>
2016-19	Top 15% (best placement) , Google Hashcode	<i>Amsterdam, NL</i>
2008-13	Top 0.1% (7th out of 9000) , International Championships of Mathematical Games, Italian Finals	<i>Milan, IT</i>
2019	Travel Scholarship Gouda de Vries	<i>Amsterdam, NL</i>
2019	Scholarship EEML Summer School	<i>Bucharest, RO</i>
2018	MSc Scholarship Giuseppe Favriani	<i>Trieste, IT</i>
2017	BSc Merit Award University of Trento	<i>Trento, IT</i>
2014	High School Merit Award Confindustria	<i>Mantova, IT</i>

Volunteering

2020-21	Reviewer duties , ICML'2020 GRL+ workshop; WWW'2021 GLB workshop
2019-21	Mentee and Mentor at LeadTheFuture , mentorship organization for selected top students in STEM from Italy.
2017-19	Member and Treasurer at Master Committee , organizing educational events for master students at UvA.
2015-17	Tutor , teaching Maths, Physics and Computer Science to High School and Bachelor students.