

**Dr. Davide Eynard, PhD**

Sr. ML Engineer at Twitter – Scientific Advisor at Videocites Ltd.

**Personal Information**

E-mail: [davide.eynard@gmail.com](mailto:davide.eynard@gmail.com)  
 Birthplace and date: February, 11th 1976, Monza (MB), Italy  
 Homepage / LinkedIn: <http://davide.eynard.it> ~ <http://www.linkedin.com/profile/view?id=4698776>

**Education**

2006 – 2008 *Doctor of Philosophy (PhD) in Computer Engineering*, Politecnico di Milano, Italy  
 1994 – 2005 *Master Degree in Computer Engineering*, Politecnico di Milano, Italy

**Research Experience**

I have worked on *knowledge* at different levels: its formalization and collective production (Description Logics, Social Semantic Web), its extraction from unstructured or semi-structured data (Social Web mining, ontology extraction from text), and its use for applications in shape analysis, image processing, and machine learning. More recently, I focused my work on geometric deep learning and its applications to large-scale graphs.

2018 – 2019 *Lecturer and Researcher at Università della Svizzera italiana, Lugano, Switzerland*  
 2009 – 2017 *Post-doctoral fellow / Researcher at Università della Svizzera italiana, Lugano, Switzerland*  
 2009 – 2010 *Post-doctoral fellow at Politecnico di Milano, Italy*

**Teaching Experience**

2017 – 2019 *Lecturer of Probability and Statistics at Università della Svizzera italiana, Lugano, Switzerland*  
 2004 – 2019 *Co-lecturer of Software Technology 2, Internet Technologies, Software Atelier 2, and Information Management and Retrieval at Università della Svizzera italiana. Previously co-lecturer of Machine Learning and Methodologies for intelligent systems and TA of CS classes at Politecnico di Milano.*

**Industrial Experience**

2019 – now *ML Research Engineer at Twitter Inc. (London, UK) - Learning Methods Research team.* I have developed data pipelines and models for geometric deep learning on massive graphs, worked on graph infrastructure, and contributed to research on more scalable and expressive GNNs  
 2018 – 2019 *Tech Lead at Fabula AI Ltd. (London, UK).* I have developed the project's DB and infrastructure on AWS and the component for news annotation. I co-authored the academic grants (ethics section in particular) and contributed to the paper (ageing experiments) and to its dissemination  
 2015 – 2019 *Software and algorithm developer at Videocites Ltd. (Netanya area, Israel).* I designed and developed the first generation of Videocites' video search engine, implementing algorithms for scalable, real-time video retrieval in large-scale databases. I have developed deep-learning algorithms to improve the engine performances (both speed and quality of results)  
 2007-2008 *Summer intern at HP Labs (Palo Alto, California, US),* working with the Chameleon and the Personal Collaboration groups on semantic technologies for collaborative systems  
 2001-2005 *Consultant at TTY Creo S.r.l. (Giussano, Italy),* as *Linux system administrator, Software engineer,* and *Project Manager* developing a Web platform for insurance companies

**Personal skills and experiences**

- Languages: Italian (mother tongue) and English (excellent reading, writing, and verbal skills)
- Creator of [3564020356.org](http://3564020356.org), a community about cryptography, steganography, and reverse engineering
- Computer security expert (won the "Capture the flag" contest with Politecnico di Milano's team)
- Natural born communicator, popularizing computer knowledge with articles, books, and talks since 1997

## Relevant Publications

- 2021 B. Chamberlain, J. Rowbottom, D. Eynard, F. Di Giovanni, X. Dong, M. Bronstein. *Beltrami flow and neural diffusion on graphs*. NeurIPS 2021.
- 2020 F. Frasca, E. Rossi, D. Eynard, B. Chamberlain, M. Bronstein, F. Monti. *SIGN: Scalable Inception Graph Neural Networks*. arXiv preprint arXiv:2004.11198, 2020  
E. Rossi, B. Chamberlain, F. Frasca, D. Eynard, F. Monti, M. Bronstein. *Temporal Graph Networks for Deep Learning on Dynamic Graphs*. arXiv preprint arXiv:2006.10637, 2020
- 2019 F. Monti, F. Frasca, D. Eynard, D. Mannion, M. Bronstein. *Fake News Detection on Social Media using Geometric Deep Learning*. ICLR 2019 Representation Learning on Graphs and Manifolds Workshop, May 2019.
- 2016 D. Eynard, K. Glashoff, E. Rodolà, M. M. Bronstein. *Coupled functional maps*. Proc. Int. Conf. 3D Vision (3DV), 2016.
- 2015 D. Eynard, A. Kovnatsky, M. M. Bronstein, K. Glashoff, A. M. Bronstein. *Multimodal manifold analysis using simultaneous diagonalization of Laplacians*. IEEE Trans. Pattern Analysis and Machine Intelligence (PAMI), Vol. 37/12, pp. 2505-2517, 2015.  
D. Boscaini, D. Eynard, D. Kourounis, M. M. Bronstein. *Shape-from-Operator: recovering shapes from intrinsic operators*. Computer Graphics Forum (EUROGRAPHICS), Vol. 34/2, 2015.
- 2014 D. Eynard, A. Kovnatsky, M. M. Bronstein. *Laplacian colormaps: a framework for structure-preserving color transformations*. Computer Graphics Forum (EUROGRAPHICS), Vol. 33/2, pp. 215—224, 2014.
- 2013 D. Eynard, L. Mazzola, A. Dattolo. *Exploiting tag similarities to discover synonyms and homonyms in folksonomies*. Software: Practice and Experience, Vol. 43/12, pp. 1437—1457, 2013.
- 2011 A. Dattolo, D. Eynard, L. Mazzola. *An Integrated Approach to Discover Tag Semantics*. ACM Symposium on Applied Computing (SAC 2011).
- 2010 D. Eynard, F. Marfia, M. Matteucci. *On the use of correspondence analysis to learn seed ontologies from text*. International Conference on Knowledge Engineering and Ontology Development (KEOD 2010).
- 2008 S. Bindelli, C. Criscione, C. A. Curino, M. L. Drago, D. Eynard, G. Orsi. *Improving Search and Navigation by Combining Ontologies and Social Tags*, Confederated International Workshops and Posters on On the Move to Meaningful Internet Systems (OTM 2008).
- 2008 D. Eynard. *Using semantics and user participation to customize personalization*. HP Labs Technical Report HPL-2008-197, HP Labs, Palo Alto, Dec 2008.
- 2007 D. Eynard, J. Recker, C. Sayers. *An IMAP Plugin for SquirrelRDF*. HP Labs Technical Report HPL-2007-161, HP Labs, Palo Alto, Oct 2007.
- 2007 D. Laniado, D. Eynard, M. Colombetti. *A semantic tool to support navigation in a folksonomy*. 18th conference on Hypertext and Hypermedia (Hypertext 2007).

London, November 8<sup>th</sup> 2022