Andrea Dal Pozzolo, PhD

Born in Schio (Italy) on August 19, 1987
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SUMMARY

I'm passionate about data and I define myself a Data Scientist: I'm an expert in Machine Learning, Data Mining and statistical techniques. In my daily job I use statistical models to extract knowledge from data and provide insights.

EDUCATION

Université Libre de Bruxelles, Brussels, Belgium

Doctor of Philosophy (Ph.D.) in Computer Science — Jan 2012 – Dec 2015
- Thesis: Adaptive Machine Learning for Credit Card Fraud Detection
- Adviser: Prof. Gianluca Bontempi
- Research areas: Machine Learning, Data Mining, Statistics and Fraud Detection.

Università di Bologna, Bologna, Italy

Master of Science (M.S.) in Applied Statistics and Actuarial Science — Sep 2009 – Dec 2011
- Thesis: Comparison of Data Mining Techniques for Insurance Claim Prediction
- Final grade: 110/110 Summa Cum Laude

Bachelor of Science (B.S.) in Statistics for Finance and Insurance — Sep 2006 – Jul 2009
- Second year at University of Glasgow (UK), Erasmus student
- Final grade: 110/110 Summa Cum Laude

RESEARCH EXPERIENCE

Politecnico di Milano, Milan, Italy

Visiting researcher at Dipartimento Elettronica e Informazione (DEI) — Apr 2015 – Jun 2015
- Supervisors: Prof. Giacomo Boracchi
- Research areas: Credit Card Fraud Detection, Concept Drift, Active Learning.

University of Notre Dame, Notre Dame, Indiana, USA

Visiting researcher at Data Inference Analytics and Learning Lab (DIAL). — May 2014 – Jun 2014
- Supervisors: Prof. Nitesh V Chawla
- Research areas: Unbalanced Classification, Concept Drift, Data Streams.

ACADEMIC AWARDS

BruFence project (total 1M 192K €), Innoviris (Brussels Region).	2015 – 2018
Doctiris PhD scholarship (320K €), Innoviris (Brussels Region).	2012 – 2015
Travel Grant for 2015 IJCNN conference (800 $), IEEE	Jul 2015
Travel Grant for research collaborations (1500 €), Université Libre de Bruxelles	Apr 2015
Master Thesis scholarship (2000 €), Università di Bologna	Sep 2011
Erasmus mundus exchange scholarship (3000 €), Università di Bologna	Sep 2007

WORK EXPERIENCE

Ernst & Young, Zurich, Switzerland

Consultant | Quant & Analytics team — Since Apr 2016
- Application of Machine Learning algorithms for conduct risk and anomaly detection.
- Anti money laundering model audit using Machine Learning techniques.
- Credit and Market risk models audit for major Swiss Banks.

VASCO Data Security, Wemmel, Belgium

Decision Analytics Consultant — Jan 2016 – Mar 2016
- Implementation of Fraud Detection Systems based on Machine Learning algorithms.
- Definition of factors used by business rules for fraud prevention.
- Development of a Link Analysis application supporting fraud investigations.

Machine Learning Group - ULB, Brussels, Belgium

Researcher — Jan 2012 – Dec 2015
- Development of Machine Learning algorithms for Fraud Detection in credit cards.
- Collaboration with the fraud detection team of Worldline S.A (Brussels, Belgium).
- Supervision and coaching of master students.

Directa Sim, Turin, Italy

Analyst   Aug 2009 – Jul 2011

  • Supervision of VisualTrader development (online stock trading platform).
  • Development of trading systems and market scanners.
  • Customer support for the trading platform.

Allianz, Milan, Italy

Life actuary assistant   Nov 2008 – Feb 2009

  • Balance analysis and report according to US GAAP and IFRS regulation (HB2).
  • Gained a basic working knowledge of Moses and Prohet software.
  • Worked in a team of 5 people having balance deadline to respect.

Absolute Quality, Glasgow, Scotland

Computer Game tester/translator   Oct 2007 – Nov 2007

  • Translation in Italian and consistency with English.
  • Develop analytical ability making sure that transcript mach my report.

Riccardo's restaurant, London, England

Waiter   Jun 2005 – Sep 2005

  • Self-funded study and work experience in London for three months.
  • Demonstrated my ability to adapt and thrive in new and different environments.

IT SKILLS

R, Python, H20, SQL, SAS, HTML, Java, C++, SPSS, LATEX, Microsoft Office suite (ECDL licence).

SOFTWARE

Developed an R package called *unbalanced* for classification with unbalanced distributions.

PUBLICATIONS

A. Dal Pozzolo, O. Caelen, and G. Bontempi, "When is undersampling effective in unbalanced classification tasks?," in *Machine Learning and Knowledge Discovery in Databases (ECML-PKDD)*, Porto, Portugal, 2015.

A. Dal Pozzolo, O. Caelen, R. A Johnson and G. Bontempi, "Calibrating Probability with Undersampling for Unbalanced Classification," in *Proceedings of 2015 IEEE Symposium Series on Computational Intelligence (SSCI)*, Cape Town, South Africa, 2015.

A. Dal Pozzolo, G. Boracchi, O. Caelen, C. Alippi and G. Bontempi, "Credit Card Fraud Detection and Concept-Drift Adaptation with Delayed Supervised Information," in *Proceedings of 2015 International Joint Conference on Neural Networks (IJCNN)*, Killarney, Ireland, 2015.

A. Dal Pozzolo, O. Caelen, Y. Le Borgne, S. Waterschoot, and G. Bontempi, "Learned lessons in credit card fraud detection from a practitioner perspective," *Expert Systems with Applications*, vol. 41, no. 10, pp. 4915–4928, 2014.

A. Dal Pozzolo, R. A Johnson, O. Caelen, S. Waterschoot, N. V Chawla, and G. Bontempi, "Using HDDT to avoid instances propagation in unbalanced and evolving data streams," in *Proceedings of 2014 International Joint Conference on Neural Networks (IJCNN)*, Beijing, China, 2014.

A. Dal Pozzolo, O. Caelen, S. Waterschoot, and G. Bontempi, "Racing for unbalanced methods selection," in *Proceedings of the 14th International Conference on Intelligent Data Engineering and Automated Learning (IDEAL)*, Hefei, China, 2013.

LANGUAGES

Italian: Native language.
English: Fluent (speaking, reading, writing).
French: Fluent (speaking, reading). Intermediate (writing).
German: Beginner (speaking, reading).

INTERESTS

Cycling, Basketball, Economics, Digital photography.

REFERENCES

Available upon request.

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