

TOMMASO FORNACIARI

EDUCATION

- 2009-2012 Center for Mind/Brain Sciences - CIMEC - University of Trento
PhD in Cognitive and Brain Sciences
- Area of Research: Language, Interaction and Computation
- Dissertation title: Deception Detection in Italian Court testimonies
- Advisor: Prof. Massimo Poesio
- 2011 Computational Linguistics & Psycholinguistics center - CLiPS - University of Antwerp
Student internship
- Study of methods of computational linguistics
- 2010 University of Copenhagen
European Summer School in Logic Language and Information - ESSLLI
- 2008 Interagency College of Advanced Studies for Law Enforcement Officials - Rome
1st AViCri Training Course for Police Force Psychologists
- Course title: Attention for Victims of Crime
- Course organized by DAPHNE II Program
- 2006 Systems and Automations - S&A - Rome
Course for the Formation of Analyst's Notebook - iBase
- Database architecture and software for criminal analysis
- 2006 National Association for Quality Guarantee - ANGQ - Rome
Informative course on the Management Systems for Quality
- With notes on work environment security
- 2005-2006 Sapienza - University of Rome
Second-level Master in Theories and Methods in Criminal Investigation - Te.M.In.Cri.
- Thesis title: Transnational serial murders analysis in Europol: state-of-the-art and European perspectives for international cooperation
- Advisor: Dr. Carlo Bui
- Grade: 110/110 with honours
- 1993-1998 University of Studies of Bologna
MA in Psychology
- Area of Studies: General and Experimental Psychology
- Thesis title: The influence of environmental heat levels on the appearance of R.E.M. sleep in the rat
- Advisor: Prof. Giovanni Zamboni Gruppioni
- Grade: 110/110 with honours
- 1996-1998 Department of General and Human Physiology - University of Studies of Bologna
Student internship
- Data collection and data analysis in neuro-physiology
- 1988-1993 State High School in Humanities M. Minghetti - Bologna
High School Diploma in Classics
- Grade: 58/60

PROFESSIONAL QUALIFICATIONS

- 2008 Order of Psychologists of Lazio
Qualification to practice the profession of psychologist

PROFESSIONAL EXPERIENCE

- 2018-2019 Bocconi University - Milan
PostDoc
- Applying neural methods for NLP to social sciences
- 2013-2018 Italian Home Office - Department of Public Security - Rome
Chief Technical Director Psychologist (NATO rank OF-4, Lieutenant-Colonel)
- Assigned to the Secretariat of the Department
Com.I.S.S.I.T. - Committee for Innovation and Standardization of ICT Systems
- Chief of the Technical Secretariat
Supporting the activities of research and technological innovation of the Department of Public Security
- 2012-2013 Central Anticrime Directorate of Italian National Police - Rome
Chief Technical Director Psychologist (NATO rank OF-4, Lieutenant-Colonel)
- Assigned to Forensic Science Police Service
Forensic Psychology Lab
- Performing criminal analysis through crime scene analysis, information analysis and behavioral analysis mainly on bloody murders and suspect deaths
- 2009-2012 Central Anticrime Directorate of Italian National Police - Rome
Chief Technical Director Psychologist (NATO rank OF-4, Lieutenant-Colonel)
- Assigned to Forensic Science Police Service
Forensic Psychology Lab
- On leave as attending the Doctoral School in Cognitive and Brain Sciences at the University of Trento
- 2007-2009 Central Anticrime Directorate of Italian National Police - Rome
Principal Technical Director Psychologist (NATO rank OF-2, Captain)
- Assigned to Forensic Science Police Service
Forensic Psychology Lab
- Performing criminal analysis through crime scene analysis, information analysis and behavioral analysis mainly on bloody murders and suspect deaths
- 2003-2007 Central Anticrime Directorate of Italian National Police - Rome
Principal Technical Director Psychologist (NATO rank OF-2, Captain)
- Assigned to Forensic Science Police Service
Violent Crime Analysis Unit - UACV
- Performed criminal analysis through crime scene analysis, information analysis and behavioral analysis mainly on bloody murders and suspect deaths
- 2002-2003 Italian National Police Superior School - Rome
Technical Director Psychologist (NATO rank OF-1, Lieutenant)
- 4[^] Technical Directors Course attended
- Thesis title: The professional figure of psychologist in Italian National Police: current employ and future development
- 1999-2002 Italian National Police Headquarters - Turin and Bologna
Agent (NATO rank OR-4)
- Performed tasks of surveillance, patrol and public order
- 1998-1999 Italian National Police School - Vibo Valentia
Cadet
- 143[^] Cadets' Course for the Italian National Police attended

HONORS

- 2011 Presidency of the Council of Ministers - Civil Protection Department
Certificate of Public Merit
- III Degree - I Segment
- For the support to victims of the earthquake of L'Aquila of April 6th, 2009

- 2019 Fornaciari, T. and Hovy, D. (2019b). Geolocation with Attention-Based Multitask Learning Models. In *Proceedings of the 5th Workshop on Noisy User-generated Text (WNUT)*
- 2019 Fornaciari, T. and Hovy, D. (2019c). Identifying Linguistic Areas for Geolocation. In *Proceedings of the 5th Workshop on Noisy User-generated Text (WNUT)*
- 2019 Fornaciari, T. and Hovy, D. (2019a). Dense Node Representation for Geolocation. In *Proceedings of the 5th Workshop on Noisy User-generated Text (WNUT)*
- 2018 Hovy, D. and Fornaciari, T. (2018). Improving author attribute prediction by retrofitting linguistic representations with homophily. In *Proceedings of the 2018 Conference on Empirical Methods in Natural Language Processing*, pages 671–677
- 2015 Fitzpatrick, E., Bachenko, J., and Fornaciari, T. (2015). *Automatic Detection of Verbal Deception*, volume 8.3 of *Synthesis Lectures on Human Language Technologies*. Morgan & Claypool Publishers
- 2014 Fornaciari, T. and Poesio, M. (2014). Identifying fake amazon reviews as learning from crowds. In *Proceedings of the 14th Conference of the European Chapter of the Association for Computational Linguistics*, pages 279–287, Gothenburg, Sweden. Association for Computational Linguistics
- 2013 Fornaciari, T. (2013a). Alla ricerca della verità - il ruolo della psicologia investigativa nella raccolta e nell’analisi delle testimonianze nelle indagini di polizia. *Polizia Moderna*, 1(10):I–XIX
- 2013 Fornaciari, T. (2013b). Nella mente criminale - la psicologia investigativa: l’esperienza del servizio polizia scientifica. *Polizia Moderna*, 1(8/9):I–XIX
- 2013 Fornaciari, T., Celli, F., and Poesio, M. (2013). The effect of personality type on deceptive communication style. In *European Intelligence and Security Informatics Conference, EISIC 2013*, pages 1–6, Uppsala, Sweden. IEEE Computer Society
- 2013 Fornaciari, T. and Poesio, M. (2013). Automatic deception detection in Italian court cases. *Artificial intelligence and law*, 21(3):303–340
- 2012 Fornaciari, T. and Poesio, M. (2012a). DeCour: a corpus of DEceptive statements in Italian COURts. In Calzolari, N. C. C., Choukri, K., Declerck, T., Uäyür Döäyñ, M., Maegaard, B., Mariani, J., Odijk, J., and Piperidis, S., editors, *Proceedings of the Eighth International Conference on Language Resources and Evaluation (LREC’12)*, Istanbul, Turkey. European Language Resources Association (ELRA)
- 2012 Fornaciari, T. and Poesio, M. (2012b). On the use of homogenous sets of subjects in deceptive language analysis. In *Proceedings of the Workshop on Computational Approaches to Deception Detection*, pages 39–47, Avignon, France. Association for Computational Linguistics
- 2011 Fornaciari, T. and Poesio, M. (2011b). Sincere and deceptive statements in italian criminal proceedings. In *Proceedings of the International Association of Forensic Linguists Tenth Biennial Conference, IAFL 2011*, pages 126–138, Cardiff, Wales, UK
- 2011 Fornaciari, T. and Poesio, M. (2011a). Lexical vs. surface features in deceptive language analysis. In *Proceedings of the ICAIL 2011 Workshop Applying Human Language Technology to the Law, AHLTL 2011*, pages 2–8, Pittsburgh, USA
- 2005 Fornaciari, T. and Bui, C. (2005). L’unità per l’analisi del crimine violento della polizia di stato. In Rossi, L. and Zappalà, A., editors, *Elementi di psicologia investigativa, Psicologia investigativa e criminale*, pages 34–40. FrancoAngeli, Milano

CONFERENCES

- 2018 ACL SIGDAT - Brussels
Conference on Empirical Methods in Natural Language Processing - EMNLP 2018
 - Talk title: Increasing In-Class Similarity by Retrofitting Embeddings with Demographic Information
- 2017 ITMO University - Saint Petersburg
Artificial Intelligence and Natural Language Conference - AINL 2017
 - Tutorial title: DeCour: a NLP experience of Deception Detection
 - Part 1
 - Part 2
- 2016 Association for Computational Linguistics - San Diego
15th Annual Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies - NAACL HLT 2016
 - Chair of the 2nd Workshop on Computational Approaches to Deception Detection - CADD 2016, in cooperation with Prof. Eileen Fitzpatrick and Prof. Joan Bachenko
- 2015 ITMO University - Saint Petersburg
Artificial Intelligence and Natural Language & Information Extraction, Social Media and Web Search Conference - AINL-ISMW FRUCT
 - Keynote speech title: Testimonies' evaluation in forensic practices: from polygraph to NLP
 - Open lecture title: Criminal Profiling in police practices, science and fiction: from the origins to future perspectives
 - Tutorial at the AntiPlagiat Workshop title: How to detect deception through stylometric analyses
- 2015 University of Toulouse
Conference and Labs of the Evaluation Forum - CLEF
 - Keynote at the 13th evaluation lab on uncovering plagiarism, authorship, and social software misuse - PAN
 - Talk title: Deception Detection in criminal analysis: from lie detector to stylometry
- 2014 University of Gothenburg
14th Conference of the European Chapter of the Association for Computational Linguistics - EACL
 - Poster title: Identifying fake Amazon reviews as learning from crowds
- 2013 Uppsala Universitet
2013 European Intelligence and Security Informatics Conference - EISIC
 - Talk title: The Effect of Personality Type on Deceptive Communication Style
- 2012 Boğaziçi University - Istanbul
8th International Conference on Language Resources and Evaluation - LREC
 - Poster title: DECOUR: a corpus of DEceptive statements in Italian COURts
- 2012 University of Avignon
13th Conference of the European Chapter of the Association for Computational Linguistics - EACL
 - Chair of the Workshop on Computational Approaches to Deception Detection, in cooperation with Prof. Eileen Fitzpatrick and Prof. Joan Bachenko
 - Talk title: On the Use of Homogeneous Sets of Subjects in Deceptive Language Analysis
- 2011 Aston University - Birmingham
International Association of Forensics Linguists 10th Biennial Conference - IAFL
 - Talk title: Detecting deception in Italian Criminal Proceedings

- 2011 PittLaw - University of Pittsburgh
13[^] International Conference on Artificial Intelligence and Law - ICAIL
 - Talk title: Lexical vs. Surface Features in Deceptive Language Analysis
- 2009 Interagency College of Advanced Studies for Law Enforcement Officials - Rome
AViCri - Attention for Victims of Crime Conference
 - Talk title: Attention and support for victims of crime: proposal for a training project for Police Forces
- 2007 Sapienza - University of Rome
37[^] National Congress of Italian Society for Forensic and Insurance Medicine - SIMLA
 - Talk title: Criminal analysis and investigative semiotics: the UACV's point of view
- 2006 Sapienza - University of Rome
36[^] National Congress of Italian Society for Forensic and Insurance Medicine - SIMLA
 - Talk title: Homicide analysis in Europol
- 2004-2006 Europol - Den Haag
Semestral Meetings of the Europol Homicide Working Group - EHWG
 - Working group on homicides requiring transnational investigations
 - Organized Meeting V, held in Rome in 2005
 - Talk title: Homicide Detection Questionnaire
- 2005 National Information Center for the 2006 Torino Winter Olympics
International workshop for information and experience exchange with FBI
 - Chair of the seminar on Behavioral analysis profiling

TEACHINGS

- 2019 Bocconi University - Milan
6 lectures within the course in Empirical Methods for Innovation Strategies
 - 1[^] lecture: Numpy, probability distributions
 - 2[^] lecture: Pandas, data exploration
 - 3[^] lecture: StatsModels, linear regression, Bayes' Theorem
 - Lectures 4, 5, 6 in progress
- 2017 CIELS - School of Studies in Language Mediation - Bologna
 Language Mediation Science - Security and social defence
10 modules/30 hours course in Criminal Psychology
 - 1[^] module: Scientific method and criminal psychology
 - 2[^] module: History of criminal psychology
 - 3[^] and 4[^] module: Personality and criminal behavior
 - 5[^] module: The homicides in Italy
 - 6[^] and 7[^] module: Investigative reasoning
 - 8[^] module: Criminal profiling
 - 9[^] module: Testimonies' collection and evaluation
 - 10[^] module: NLP and deception detection
- 2017 Niccolò Cusano University
I Level Master in Criminology and security in contemporary world
3 modules/4,5 hours on line course in Testimonies' evaluation in police investigation
 - 1[^] module: Psychology of memory and eyewitness testimonies
 - 2[^] module: Techniques of interview
 - 3[^] module: Theories and methods for deception detection
- 2013 Forensic Science Police Service - Rome
5[^] Video and Photo Forensics and Fingerprint Analysis Specialization Course
 - 1[^] lecture title: Psychology of memory and Cognitive Interview
 - 2[^] lecture title: The homicidal phenomenon in Italy: a statistical approach

- 2012 Faculty of Arts and Humanities - University of Trento
Degree in Philosophy and Modern Languages
Artificial Intelligence Course
 - 1^ lecture title: Introduction to WEKA
 - 2^ lecture title: Decision Trees in WEKA
 - 3^ lecture title: Support Vector Machine in WEKA
 - 4^ lecture title: Experimenter in WEKA
- 2010 University of Trento - Faculty of Cognitive Sciences
Degree in Sciences and Techniques of Cognitive Psychology
Learning & Memory Psychology Course
 - Lecture title: Face recognition and description in Police investigations
- 2010 European University of Rome
Criminology and Forensic Psychology Course
 - Lecture title: Crime scene analysis in bloody murders
- 2009 Forensic Science Police Service - Rome
89^ Video and Photo Forensics Specialization Course
 - Lecture title: Predictive Models for Crowd Movement: Practical Application for Forensic Science Police Service
- 2008 Forensic Science Police Service - Rome
88^ Video and Photo Forensics Specialization Course
 - Lecture title: Cognitive Interview
- 2008 Forensic Science Police Service - Rome
University of Cassino - Master in Judicial, Penitentiary and Investigative Psychology
Students' internship
 - Lecture title: Criminal Analysis on Bloody Murders: from the Crime Scene to the Author Profiling
- 2008 Forensic Science Police Service - Rome
87^ Video and Photo Forensics Specialization Course
 - Lecture title: Cognitive Interview
- 2007 Forensic Science Police Service - Rome
86^ Video and Photo Forensics Specialization Course
 - Lecture title: Cognitive Interview
- 2007 Sapienza - University of Rome
Level II Master in Theories and Methods in Criminal Investigation - Te.M.In.Cri.
 - Lecture title: Criminal Analysis on Bloody Murders: from the Crime Scene to the Author Profiling
- 2007 Judiciary Administrative and Investigative Police School - Brescia
2^ Seminar on Organized Crime
 - Lecture title: Criminal Analysis in bloody murders: from Crime Scene Analysis to Author Profiling
- 2006 University of Studies of Siena - Department of Forensic Pathology "G. Bianchini"
I level Master in Criminology
 - Lecture title: A synoptic analysis: Ferdinand Gamper - Michele Profeta
- 2006 Judiciary Administrative and Investigative Police School - Brescia
Seminar on Investigation Techniques for Emirates Police Officers
 - Lecture title: Criminal Analysis in bloody murders: from Crime Scene Analysis to Author Profiling

- 2006 Judiciary Administrative and Investigative Police School - Brescia
Seminar on Organized Crime
 - Lecture title: Criminal Analysis in bloody murders: from Crime Scene Analysis to Author Profiling
- 2006 Forensic Science Police Service - Rome
3rd Course for Italian National Police Vice Technical Experts
 - Lecture title: Forensic Science Police Service and Europol cooperation
- 2006 Forensic Science Police Service - Rome
85th Video and Photo Forensics Specialization Course
 - Lecture title: A monographic analysis: Marco Bergamo
- 2005 Forensic Science Police Service - Rome
5th Course for Italian National Police Vice Reviser
 - Lecture title: A monographic analysis: Marco Bergamo
- 2005 Forensic Science Police Service - Rome
84th Video and Photo Forensics Specialization Course
 - Lecture title: A monographic analysis: Marco Bergamo
- 1998 Italian National Police Academy - Vibo Valentia
143rd Cadets' Course for the Italian National Police
 - Lecture title: Introduction to Psychology of Communication, with notes on Police Agent profession

SPEECHES

- 2017 Russian Presidential Academy of National Economy and Public Administration
 Moscow
Seminar
 - Talk title: DeCour: a NLP experience of Deception Detection
- 2016 Universiteit van Amsterdam - Psychology Research master's
Seminar
 - Talk title: Modern deception detection in real-life court cases: An applied perspective
- 2016 Rotary Club of Bologna
Seminar
 - Talk title: Forensic linguistics: new perspectives for police investigations
- 2016 University of Barcelona
Seminar
 - Talk title: Testimonies' collection and analysis in police practice: methods and technologies
 - Talk title: DeCour: a NLP experience of Deception Detection
- 2016 Universitat Politècnica de València
 Departamento de Sistemas Informáticos y Computación
Seminar
 - Talk title: Deception detection in criminal analysis: from lie detector to stylometry
- 2016 University of Turin
Seminar
 - Talk title: Deception detection in science and police practices: from polygraph to NLP perspectives

- 2016 Italian Society of Emergency Psychologists - SIPEM - Parma
Refresher course
- Lecture title: Testimonies' collection and analysis for police investigations
- 2014 Italian Society of Emergency Psychologists - SIPEM - Parma
The suspended time: Conference on Missing People
- Lecture title: Profiling: notes on victimization and psychology
- 2011 Computational Linguistics & Psycholinguistics center - CLiPS - University of Antwerp
Antwerp-Tilburg Inductive Language Acquisition project - ATILA research meeting
- Talk title: Deceptive Language Identification in Italian Criminal Proceedings
- 2011 Italian National Police Headquarters - Trento
Refresher course
- Lecture title: Deceptive language: false testimonies in criminal proceedings
- 2011 Department of Information Engineering and Computer Science - University of Trento
Social Informatics Seminars
- Talk title: Perspectives in detecting deception in Italian Criminal Proceedings
- 2010 University of Trento - Center for Mind/Brain Sciences - CIMEC
CLIC Topic Seminars
- Talk title: Creating a collective recollection of events in court
- 2009 Piazza del Popolo - Rome
157th Anniversary of Italian National Police
- Talk title: Identikit and Cognitive Interview
- Performed simulations of crime scene investigations
- 2007 Association for the Festival of Science - Genoa
Festival of Science
- Talk title: Criminal Analysis on Bloody Murders: from the Crime Scene to the Author Profiling

MEDIA

- 2016 Radio Aula 40
radioaula40.cnr.it/
- Interview: Professione: cybersecurity
- 2014 Il Corriere della Sera
corriere.it
- Mention in article: The Italian software which unmasks liars
- 2014 Radio 3
Scienza
- Interview: The words are important!
- 2014 New Scientist
Tech
- Mention in article: Perjurers and fake reviews train software to spot lies
- 2013 Wall Street Journal
Law Blog
- Interview: Could Robots Replace Jurors?
- 2007 Rai 3
Amore Criminale
- Interview on the murder of Silvia De Paolis

- 2006 Rai 3
Cominciamo Bene Estate
- Interview on how to age images of missing persons
- 2006 Rai 3
Cominciamo Bene
- Interview on crime scene investigations
- 2006 Rai 1
Uno Mattina
- Interview on how Italian National Police supports scriptwriters of police fictions
- 2006 Rai 3
UACV
- Docu-fiction in eight episodes on UACV activities
- 2006 Radio 24
Trovati un bravo ragazzo
- Interview on crimes of passion
- 2005 Rai 3
Chi l'ha visto?
- Interview on how to age images of missing persons, with reference to the case of Andrea Ghira
- 2005 Rai Educational
EXPLORA - La TV delle Scienze
- Interview on crime scene analysis and 3D reconstruction of criminal events
- 2004 Rete 4
Vite straordinarie
- Forensic Science Police Service experts, relying on the image of the Holy Shroud, realized a hypothetical reconstruction of Jesus' face as child
- Interview and presentation of the reconstruction

ASSOCIATIONS

- 2016-2018 Associazione Archeosofica - Rome
Member
- Cultural association of Christian inspiration, with interest in spirituality and asceticism
- 2005-2016 Accademia Romana d'Armi - Rome
Member
- Historical, theoretical and practical study of ancient and historical fencing
- 4[^] of 5 technical degree
- 2001 Mensa Italy - The high I.Q. Society
Qualified for membership
- I.Q. value of 160 on Cattell scale

LANGUAGES

- Italian Native speaker
- English B2 level in Common European Framework of Reference - CEFR
First Certificate in English (FCE) obtained in 2009
- French Scholastic level

TECHNICAL SKILLS

Programming	Python, Perl, C
Marking Up	XML
Computing	tensorflow, scikit-learn, R, WEKA
Composing	L ^A T _E X
Intelligence	Analyst's Notebook - iBase