

Work Experience

Oct, 2018–present **Research Scientist**, *NEC Laboratories Europe*, Heidelberg, Germany.

- **Research & Development:**
 - Designed and developed an ensemble learning based algorithm for imbalanced binary classifications tasks (applied to predictive maintenance, credit fraud detection, webpage classification and medical tasks). Filed a patent and accepted international paper.
 - Currently, working on design and development of continual learning based ML algorithm.
 - International Publication: IJCNN 2020 (CORE RANK A).
- **European Union Project COREALIS (Project Manager):** Leading the development and productization of models for predictive maintenance and travel time prediction tasks for trucks operating at European sea ports using meta learning for ensemble methods.
- **Business Unit Projects (Project Manager):** Leading the development of algorithms for projects on driver drowsiness detection (using multi-task learning) and predictive maintenance task (using ensemble learning).
- Utilizing **Design Thinking** principles to solve wicked problems in public safety domain.
- Responsible for developing interactive **visualizations** for developed methods.

Nov, 2015–Oct,2018 **Doctoral Researcher**, *LIG, Grenoble and LaHC, Saint-Etienne*, France.

- Designed and developed 3 multiview learning algorithms using PAC-Bayesian theory and ensemble learning.
- Experimented on text (written in 5 languages) and image (with 4 views) datasets. Showed significant improvement in prediction performance compared to state-of-art methods.
- Actively involved in French ANR Project LIVES.
- International publications: Neurocomputing Journal 2019, IDA 2018 (CORE Rank A), ECML-PKDD 2017 (CORE Rank A).
- National publications: CAp 2018, CAp 2017, CAp 2016.

Aug–Oct,2015 **Data Science Engineer**, *Cube26 Private Limited*, New Delhi, India.

Developed algorithms for aggregation of similar news articles from different sources and finding the appropriate advertisement banners for the news articles for Neon News android application.

Feb–Jun,2015 **Research Intern**, *Laboratoire d'Informatique de Grenoble (LIG)*, Grenoble, France.

- **Masters Thesis** at AMA team, LIG, Grenoble under the guidance of Prof. Massih-Reza Amini.
- Designed and developed an algorithm for learning information retrieval models' parameters using transfer learning approach from a labeled source collection to an unlabeled target collection.
- Publication at French Machine Learning Conference CAp 2015.

May–Aug,2014 **Software Developer**, *Pyramid Cyber Security & Forensics Private Limited*, New Delhi, India.

Designed and developed an algorithm to detect frauds (made using erasable ink pens) in back cheques for Punjab National Bank, India.

May–Jul,2013 **Research Intern**, *University of Hyderabad*, Hyderabad, India.

- Designed and developed an algorithm to find number of clusters in short text documents using Ncut-term weighing scheme and spectral clustering (under the guidance of Prof. Arun K. Pujari).
- Publication at IEEE conference NCVPRIPG 2013.

May–Jul,2012 **Developer Intern**, *Institute of Nuclear Medicine & Allied Sciences (INMAS), DRDO*, Delhi, India.
Designed and developed Leave Management System and Document Dispatch System using PHP, MySQL, HTML and CSS.

Education

- 2015–2018 **Ph.D. in Machine Learning**, *Université de Lyon*, Lyon, France,
Supervisors: Prof. Massih-Reza Amini and Dr. Emilie Morvant.
Subject: Learning a Multiview Weighted Majority Vote Classifier: Using PAC-Bayesian Theory and Boosting.
- 2014–2015 **Masters of Science in Informatics (MOSIG)**, *ENSIMAG, Grenoble INP*, Grenoble, France, (*with honors*).
Subjects: Machine Learning, Information Access and Retrieval, Computer Vision, Advanced Human-Computer Interaction, Computational Geometry and Medical Imaging, Simulation & Robotics.
- 2010–2014 **Bachelor of Technology**, *The LNMIIT*, Jaipur, India, *CGPA – 8.69/10*.
Specialization: Computer Science and Engineering

Activities

- R&I Projects European Union Project **COREALIS** (Oct 2018 - present).
French **ANR LIVES** Project (Jan, 2016-September, 2018).
- Student Supervision **Soroush Seifi**, SUBJECT:“A PAC-BAYESIAN MULTIVIEW STUDY”, Laboratoire Hubert Curien, CNRS, Saint-Etienne, France (Apr–Jun,2016).
Co-supervised with Prof. Amaury Habrard and Dr. Emilie Morvant
- Workshops Design Thinking 2019, Proposal Writing for H2020 R&I Projects 2019, Deep Learning Workshop 2017, Computational and Statistical Trade-offs in Learning 2016
- Summer School Gaussian Process and Uncertainty Quantification Summer School, 2019
- Teaching Assistance **Database Management Course**, The LNMIIT, Jaipur, India (Jan-May,2012 & Jan-May,2013).
Co-advised with Prof. Subrat K. Dash
- Coursera Courses
 - Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization (Grade Achieved: 100.0%)
 - Neural Networks and Deep Learning (Grade Achieved: 100.0%)

Skills

- Programming Python, C, JAVA, MATLAB, SQL
- Tools ML tools (Scikit-learn, Numpy, Pandas, Jupyter notebook), Deep Learning (TensorFlow), Visualization (Plotly, Matplotlib, D3.js, Mapbox), Web Development (HTML, CSS, PHP, JavaScript, JSP), AWS (EC2), Terrier IR Platform
- Project Management Agile Methodology, Design Thinking, Experience in working in multidisciplinary teams
- Languages English: fluent / French: intermediate / Hindi: native speaker

Filed Patents

- 2020 **Anil Goyal**, Ammar Shaker and Francesco Alesiani, “A method for Machine Learning Knowledge Management based on life-long boosting in presence of less data”.
- 2019 **Anil Goyal** and Jihed Khiari, “Diversity-Aware Weighted Majority Vote Classifier for Imbalanced Datasets”

Publications

Google Scholar Profile