

MANAV MAHAJAN

PERSONAL DATA

PLACE AND DATE OF BIRTH:: New Delhi, India | 29 June 1994
PHONE: +33 605 818353
EMAIL AND WEBPAGE: manav2994@gmail.com | <http://manav.space>

EDUCATION

- 2020 Master's Degree
in **Computer Science, specialisation in "Digital Security"**
EURECOM, France
- 2017 Bachelor of Technology
in **Computer Science and Engineering**
GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, India

EXPERIENCES

- SEPT-NOV 2017 | PRECOG - IIIT DELHI
Research Associate, Supervisor - Prof. Ponnurangam Kumaraguru(PK)
Worked with the privacy and security research group on studying and analysing varied aspects of online social media. Collected and analysed twitter data to understand the behaviour of different stakeholders on certain environmental issues. Analysed instagram data to classify dangerous selfies or killfies and study behavioural pattern of the uploader.
- JAN-MAR 2017 | SENTICNET - NANYANG TECHNOLOGICAL UNIVERSITY (SINGAPORE)
Research Assistant, Supervisor - Dr. Erik Cambria
Worked with the Sentic Team on the following projects:
Aspect Extractor& NER Tagger
I trained models for Aspect Extraction and NER using neural networks for sentiment analysis. SemEval-2014 Dataset was used for training along with SENNA word-embeddings as features. Both the trained models are accurate and robust with respect to training and testing.
Knowledge Expansion
Enriched the concepts in Senticnet used in Concept level sentiment analysis. The concepts and emotions were generated using MPQA (lexicon), ConceptNet and WNA (WordNet-Affect). These concepts were then added as sentic vectors to the Senticnet.
- SUMMER 2016 | CYBER SECURITY CENTRE - UNIVERSITY OF WARWICK (UNITED KINGDOM)
Summer Research Intern, Supervisor - Prof. Carsten Maple
Behaviour Based Authentication System
Worked with the research team at Cyber Security Centre to propose and devise secure methods for authentication of users using mobile devices. Sensor data was collected after doing a state-of-the-art review and predictions were done using machine learning algorithms [SVM, KNN, Random Forest]. The devised method successfully authenticated a legitimate user.

SUMMER 2015	<p>SSPL - DEFENCE RESEARCH & DEVELOPMENT ORGANISATION (DELHI, INDIA) <i>Summer Intern, Supervisor - Dr. Chandra Prakash</i> Network Planning and Design Worked with the Information Technology Group at DRDO for designing and implementing a network for the labs. NS3(Network Simulator) was used to design and test the network. The proposed network was designed keeping in mind the cost effectiveness and efficient use of network hardware.</p>
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PROJECTS

Fall 2018	<p>Understanding the security implications of the ‘appification’ trend in the cyber-physical context <i>Eurecom (Semester Project), Supervisors - Prof. Davide Balzarotti, Prof. Yan-ick Frantantonio and Dr. Davide Quarta</i> With an exponential growth in the areas of Cyber Physical System (CPS) and Mobile Applications, plethora of new security threats have surfaced up. We reviewed the current State-of-the-art of CPSs and their security issues in general. We analysed the present situation of Android Applications for the Industrial Controlled Systems (ICS) and Industrial Robots and reversed a small sample of applications.</p>
Spring 2017	<p>Multimodal Dataset Annotation <i>Language Technologies Institute, Carnegie Mellon University</i> Annotated 700 YouTube videos on audio, video, subtitle (text) and semantic (meaning) content. The dataset, MOSI2 [MOSI: Multimodal Corpus of Sentiment Intensity and Subjectivity], will be the largest Multimodal Learning resource available for researchers.</p>
Spring 2017	<p>Bio-Signals Emotion Detection <i>Bachelor’s Major Project Thesis</i> Emotion detection can be achieved through multiple methods, using natural language, speech, facial expression and Bio-signals. We investigated the use of Bio-signals for human emotion detection. We derived features from different brainwaves of the ECG signal and used them to train our system using supervised learning methods. We compared the accuracy on the two main dimensions of an affective experience - arousal and valence. SVM, KNN and Decision Trees algorithms were used on [DEAP, MANHOB-HCI and ECG] annotated datasets. Emotions were predicted with high level of accuracy.</p>
Autumn 2016	<p>Hindi Sentiment Analysis <i>Bachelor’s Minor Project Thesis</i> Hindi SentiWordNet(HSWN) lexicon based approach was used to classify the sentiments of a tweet. Latest tweets were collected for a product for sentiment extraction, which were then aggregated to give an overall opinion of the product. Project was awarded for the ‘Best Research Poster’ in the college</p>

Autumn 2015	College Network Management <i>Independent College Project</i> A server was designed using pfSense firewall for maintaining the college's on-campus intranet. URL filtering was implemented using squid-Guard, authentication was provided using a captive portal and FreeRADIUS server.
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TECHNICAL SKILLS

Languages: Python, C, C++, PHP, Java

Specific Tools: WEKA, NS3, CISCO PACKET TRACER, MYSQL, \LaTeX , Git

Platforms: Linux, Windows

ACHIEVEMENTS

- Won OSMpalooza, an Online Social Media Hackathon organised by PRECOG, IIIT Delhi
- Runner-up in Enigma (Online Cryptographic Hunt) organised by IIT Indore
- Qualified for the Google Code Jam-2015
- Ranked first in University in IEEEExtreme 7.0 Coding Competition
- Gold medallist in IAIS by UNSW, Australia in Science, Digital Technologies & Mathematics for 4 consecutive years

OTHER ACTIVITIES

- Conferences attended:
 - Security [Ground Zero Summit & The Hackers Conference] , New Delhi
 - NLP [Knowledge Reasoning Workshop, I^2R & S^3A , NTU] , Singapore
- Volunteered with NGOs:
 - MATES Eco Club in events like Plantation Drive
 - BloodConnect as a part of technical team
- Organised a workshop, 'How to Solve a Rubik's Cube'
- Started an educational YouTube channel as a part of Google Developers Group
- Links to my: [Astronomy Blog](#), [MITM Attack tutorial](#)

REFERENCES

NAMITA GUPTA	Head of CS Department, Maharaja Agrasen Institute of Technology namita@mait.ac.in
SOUJANYA PORIA	Research Scientist, TL@Nanyang Technological University sporia@ntu.edu.sg
CARSTEN MAPLE	Director Cyber Security Research, University of Warwick cm@warwick.ac.uk