RAMAN DUTT

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EDUCATION

BACHELOR OF TECHNOLOGY IN COMPUTER SCIENCE AND ENGINEERING

SHIV NADAR UNIVERSITY (2020)

- CGPA - 8.75

WORK EXPERIENCE

- **RESEARCH INTERN (Jun'20 to Present)**

  Healthcare Innovations and Translational Informatics LAB (HITI), Emory University, USA

  - Working under Dr. Hari Trivedi and Dr. Judy Gichoya on semantic segmentation and classification of spine-hardware brand using X-Ray reports.
  - Leading the team for identification of Melanoma in lesion images for the challenge organized by Society for Imaging and Informatics in Medicine (SIIM)

- **SUMMER RESEARCH INTERN (Dec'19 to May'20) [Undergraduate Thesis]**

  COMPUTATIONAL BIOLOGY LAB (TAVLAB), IIIT-DELHI, INDIA

  - Working under Dr. Tavpritesh Sethi on prediction of Hemodynamic Shock from Thermal Images and Videos in collaboration with AIIMS, Delhi.
  - Worked on Visualization of the attention heads of the model using gradCAM.
  - Implemented and studied different strategies for domain-specific model pretraining and evaluation on highly imbalanced medical datasets.

- **SUMMER RESEARCH INTERN (May'19 to July'19)**

  COMPUTATIONAL BIOLOGY LAB, IIIT-DELHI, INDIA

  - Worked on AlgPred webserver for classification of protein sequences into Allergens and Non- Allergens under Dr. GPS Raghava.
  - Implemented ensemble machine learning models such as Bagging, Boosting, Voting and Cascaded-classifiers.
  - Implemented a deep neural network based on the architecture of Capsule Network and handled data preprocessing.

- **SUMMER RESEARCH FELLOWSHIP PROGRAM (May'18 to July'18)**

  INDIAN INSTITUTE OF TECHNOLOGY, GANDHINAGAR, INDIA

  - Selected amongst 300 students all over India for the SRFP program by the Indian Academy of Sciences.
  - Worked under Dr. Shanmuganathan Raman (IIT Gandhinagar) on Computer Vision and Digital Image Processing. Implemented algorithms such as bilateral filters, guided filters and deep neural networks for Tone Mapping, Image de-hazing.

- **PRODUCT DEVELOPMENT INTERN (Dec'17 to Jan'18)**

  DESIGN INNOVATION CENTER, UNIVERSITY OF DELHI, INDIA

  - Worked on a project funded by the Government of India on analysis of speech recordings and corresponding text transcripts. The system learns the pronunciation of character, phonemes, and word in the voice by listening to the human audio inputs.

ACADEMIC PROJECTS

- Stimulus - News Network based on Blockchain
  - Developed a decentralized news network using Ethereum for transactions.
  - Developed an android application and demonstrated that the network could be sustained without ad-revenue. Devised a scheme to prevent the spread of fake news on the network.
- Happifier - A Complete Mental Health Platform
  - Led a team of 10 students for developing an android app for the platform.
  - Deployed machine learning algorithms for analysis of user responses.
  - Integrated the app with the medical center "Blue Circle" on the campus.
- Exams-are-coming Android Application
  - Developed an android application to store the previous year question papers for subjects offered by different departments and schools at Shiv Nadar University.
- Smart Bin

- Developed a storage facility that uses machine learning, android and Arduino to automatically separate biodegradable and non-biodegradable waste. The data from the waste is stored on the cloud for later access.

PUBLICATIONS

- **Drug Activity Prediction using Capsule Networks and Dynamic Routing Algorithm (Raman Dutt, Dr. N. Sukumar)**
  - Poster presented in the 15th German Conference on Cheminformatics.
- **Application of Capsule Networks and Chemical Space Networks in Cheminformatics (Dr. N. Sukumar, Raman Dutt)**
  - Poster presented in the 15th German Conference on Cheminformatics (GDCh).
- **Forecasting the Grant Duration of a Patent using Predictive Analytics (Raman Dutt, Dr. Vinita Krishna)**
  - Full paper accepted in International Journal of Computer Applications (IJCA), September Edition.
- **Novel Mixed-Encoding for Patent Grant Duration Prediction (Raman Dutt, Prakhar Rathi, Dr. Vinita Krishna)**
  - Full paper submitted in the journal World Patent Information, Special Issue: Artificial Intelligence for Intellectual Property.

POSITIONS HELD

- President - Association for Computing Machinery (ACM) Campus chapter
- Lead - Developer Student Club (DSC), Shiv Nadar University by Google Developers
- Core Committee Member - Student Counseling Committee

ACIEVEMENTS

- Awarded a scholarship of 300 euros from Gesellschaft Deutscher Chemiker (GDCh) to attend and present my work in the 15th German Conference on Cheminformatics in Mainz, Germany.
- Only international student to receive a travel grant of $700 to attend and present in the Machine Learning in Science and Engineering (MLSE) conference at Georgia Tech University, Atlanta, Georgia.
- Winner of Smart India Hackathon 2019 by MHRD in the problem statement "Traffic Optimization using Aerial Images Captured by UAVs" proposed by MathWorks amongst 5 million participants.

- All India Rank - 3 in National Astronomy Olympiad amongst 150,000 participants.
- Olympiad Rank - 3 in International Olympiad of Science amongst 100,000 participants. Also secured Rank-1 at the state level.
- Awarded 75% tuition fee waiver to study at Shiv Nadar University due to exceptional performance in the 12th standard.
- Got felicitated with the Dean's List for being in the top 1% in the School of Engineering (SoE) in the 1st, 2nd and 5th Semesters.
- Completed the Opportunities for Undergraduate Research (OUR) program at Shiv Nadar University with an "Excellent" grade.
- Winner of Hack2Hire hackathon Organized by Dell-India. Also secured a Pre-Placement Offer (PPO) for exceptional performance in the hackathon.
- Winner of HackData organized by ACM chapter of Shiv Nadar University. Also part of the youngest team to date to win this event.