Mahesh Sudhakar

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Experience

- **Research Assistant** — Toronto, Canada
  University of Toronto — *May 2020 - Present*
  - Post-graduate researcher in Bell Multimedia Laboratory in collaboration with LG Science Park (LGSP, Seoul) working towards decoding complex Machine Learning classification and detection models.
  - Developing novel eXplainable AI (XAI) algorithms to be integrated along with LG's existing state-of-the-art industrial defect identification ML models.
- **Systems Engineer** — Bangalore, India
  Infosys Limited — *May 2016 - July 2018*
  - Backend developer for the UK region of AIMIA (formerly Groupe Aeroplan) - a data driven loyalty analytics company based out of Montreal.
  - Developed and maintained multiple MySQL stored procedures in the relational DB management system server.
  - Managed several diverse sensitive banking data regarding retail and logistics, and worked on automating (RPA) numerous periodic IT processes through the ActiveBatch tool.

Education

- **University of Toronto** — Toronto, Canada
  Master of Engineering in Electrical & Computer Engineering (ECE); GPA: 3.97/4.00 — *Sept. 2018 - Apr. 2020*
- **Anna University** — Chennai, India
  Bachelor of Engineering in Electrical & Electronics Engineering (EEE); cGPA: 8.54/10.00 — *Aug. 2012 - Apr. 2016*

Projects

- **Student Engineer, aUToronto** — *Jan. 2020 - Present*

  Working in Simulation and Experimentation team of aUToronto (U of T's self-driving car team), building virtual scenarios for the ego vehicle to drive through, thereby testing the pedestrian detection and tracking algorithm by exporting the sensor data to ROS environment.

- **Explainable Artificial Intelligence for Visual Defect Inspection** — *Sept. 2019 - Apr. 2020*

  Developed and studied XAI algorithms that generate saliency maps according to the importance of each corresponding pixel towards the Machine Learning model's predictive accuracy, intending to unravel complex 'black-box' models.

- **3D Object Detection and Tracking** — *Sept. 2019 - Dec. 2019*

  Vision sensor data (RGB and Depth) collected from a semi-humanoid robot 'Pepper' provided by IATSL laboratory, are used to perform 3D human detection and tracking within a household setup enabling better assistance to old or sick-adults in home-care.

- **Breast Cancer Classification with CNN** — *Jan. 2019 - Apr. 2019*

  Trained a Convolutional Neural Network model, to classify and predict Invasive Ductal Carcinoma (IDC), a specific type of breast cancer - with high accuracy, on LIDC-IDRI medical image dataset by the Cancer Imaging Archive, using modern digital image processing algorithms.

Activities

- Peer mentor for incoming international grad students under the iConnect program of CIE during the year 2019-20.
- VP Communications of the ECE Graduate Students Society (ECEGSS) for the academic year 2018-19.
- Campus Ambassador at the Academic and Campus Events (ACE) and a part-time usher at the convocation hall.
- Academic coordinator for the department of EEE during undergrad, acting as a liaison between faculty and students, and leading a team of 50 members to the coveted inter-departmental championship shield.

Programming Skills

- **Languages**: Python, C++, SQL, C#, HTML
- **Softwares & Tools**: MATLAB, TensorFlow, Keras, PyTorch, OpenCV, SQL Server, LaTeX, Git, ROS, Gazebo