Mahesh Sudhakar

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Experience

- **Research Assistant** Toronto, Canada
  University of Toronto *May 2020 - Present*
  - Post-graduate researcher at Bell Multimedia Laboratory, in collaboration with LG Science Park (LGSP, Seoul) working towards decoding deep residual Machine Learning classification and detection models.
  - Proposed and developed a novel architecture of eXplainable AI (XAI) algorithm, that's to be integrated along with LG Chem's existing state-of-the-art industrial defect identification code stack for fully automated supervision.
  - Engaged actively with LG researchers to patent and publish the developed algorithm.
- **Systems Engineer** Bangalore, India
  Infosys Limited *May 2016 - July 2018*
  - Developed and delivered multiple MySQL Stored Procedures in the relational DB management system server, for a data-driven loyalty analytics client, as their Back-End software developer.
  - Managed several diverse sensitive banking data regarding retail and logistics, and contributed towards automating (RPA) numerous periodic IT processes.
  - Addressed many client-specific functional requirements, and have quickly resolved various critical real-time issues amidst minimal supervision.

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

- **Autonomous Systems Simulation, aUToronto** *Jan. 2020 - June 2020*

  Designed and built various simulated scenarios for the ego vehicle to drive through to test the pedestrian detection and tracking algorithm of Zeus (UofT's self-driving car), by exporting the corresponding sensor data to ROS framework.

- **Explainable AI Algorithms for Visual Defect Inspection** *Sept. 2019 - Apr. 2020*

  Developed and studied XAI algorithms that highlight the regions of the image corresponding to the model's predictive accuracy. Identified potential approaches to build an unbiased efficient model for industrial defect inspection use cases.

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

  Implemented a human detection and tracking stack on a semi-humanoid robot - Pepper, using the 3D vision data collected from its RGB and Depth sensors within a confined setup, to enable better assistance for the old.

- **Breast Cancer Classification** *Jan. 2019 - Apr. 2019*

  Trained a Convolutional Neural Network with relatively higher accuracy, on a binary classification task to identify Invasive Ductal Carcinoma - the most common type of all breast cancers, on patches of H&E stained histopathology images using modern digital image processing algorithms and diverse hyper-parameter tuning.

Activities

- Mentored the incoming international graduate students during their transition, and facilitated intercultural learning.
- Promoted our academic, social, and professional development activities as the VP of ECE Graduate Student Society.
- Lead a team of 50 members as their Academic Coordinator, acting as a liaison between faculty and students 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